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Gleanings in Bee Culture



*A Late Summer Offering
for the Bees.*

\$! Order Your Queens Now \$!

QUEENS OF SUPREME QUALITY.

Just think of it. Only \$1 for one of my bright three-banded northern-bred Italian queens, after 19 years of select breeding. I have produced a strain of bees that get the honey and stand the northern winters. Last year every order was filled by return mail. Expect to do the same this year. This is the kind of letters I receive daily:

"Dear Mr. Major: How early in spring could you fill an order for one dozen Italian queens? My experience and observation with your strain of Italians have shown them to be extremely gentle, superior as workers, and unexcelled in the beautifully white and even capping of the honey. Yours very truly,
"Orel L. Hershiser."

Mr. Hershiser is one of our state inspectors and has been a beekeeper almost all his life; also inventor of the Hershiser wax-press. Does he know good bees when he sees them? Does a duck swim? I guarantee pure mating, safe arrival, free from disease and health certificate furnished with each shipment.

Select Untested, from 1 to 100, \$1.00 each.
Extra-Select Breeders, \$5.00 each.

All candy in queen-mailing cages mixed to government regulations; all orders greatly appreciated and acknowledged the same day received.

H. N. MAJOR, SOUTH WALES, N. Y.

"Griggs Saves You Freight"

TOLEDO

With its great system of railroads and electric lines, is the most advantageous point at which to make your purchases on the following: (Let us prove this to you.)

Special CASH DISCOUNTS ON BEE SUPPLIES.

For cash or exchange for honey. Write us what you will need and whether you have Comb or Extracted Honey to exchange, giving particulars as to how packed, kind, etc. We take Extracted Honey in 60-lb. cans only. No pails wanted.

HONEY! HONEY! HONEY! NEW CROP!
If you wish to buy or sell, write us and we will quote you best cash prices.

FOR SALE—SPOT SHIPMENT.

Fancy W. Clover in 5-gal. case, 2 to case	\$0.16
Fancy W. Orange (crystallized) in 5-gal. cans, 2 to case	.14
Fancy W. Sage, new crop, in 5-gal. cans, 2 to case	.16
Light Amber Honey, in 5-gal. cans, 2 to case	.12
Buckwheat in 5-gal. cans, 2 to case	.12
Shipping Cases and Friction Top Pails all sizes. Special prices quoted according to quantity wanted.	

GRIGGS BROS. CO.
TOLEDO, OHIO

"Griggs Saves You Freight"

1922 SUMMER PRICES 1922

--ON--

Quality Bees and Queens

There is bound to be a rush re-queening during July, August and September. For this occasion we offer the following prices:

1 Untested Queen	\$1.00
25 or over	.90
1 Select Untested Queen	1.25
25 or over	1.10
1 Tested Queen	1.75
25 or over	1.25
1 Select Tested Queen	2.00
25 or over	1.50

No package bees or nuclei shipped the remainder of this season.

Safe arrival and satisfaction guaranteed.

THE A. I. ROOT COMPANY OF TEXAS
BOX 765. SAN ANTONIO, TEXAS.





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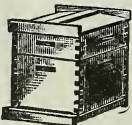
H. G. Rowe
M'n'g Editor

HONEY WANTED HONEY

WE ARE in the market for both comb and extracted. Send sample of extracted, state how put up, with lowest price, delivered Cincinnati. Comb honey, state grade and how packed, with lowest price delivered Cincinnati. We are always in the market for white honey, if price is right.

C. H. W. WEBER & CO.

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MR. BEEKEEPER----

We have a large plant especially equipped to manufacture the supplies that you use. We guarantee all materials and workmanship. We ship anywhere. We allow early order discounts and make prompt shipments. *We pay the highest cash and trade prices for beeswax.*

Write for free illustrated catalog today.

LEAHY MFG. CO., 95 Sixth Street, Higginsville, Missouri

Texas Beekeepers should write to A. M. Hunt, Goldthwaite, Texas.

HONEY CANS AND CASES

Several carloads, all sizes, just received at our Ogden, Utah and Idaho Falls, Idaho, warehouses. Quick service; lowest prices. Also comb honey cases, all kinds.

SUPERIOR HONEY CO., OGDEN, UTAH

(Manufacturers Weed Process "SUPERIOR FOUNDATION" and Dovetailed Beehives.)



A MESSAGE FOR YOU



You need our new 1922 bee supply catalog more than ever before. Have you received one? Many new articles are listed for the saving of labor and greater honey production. Our attractive prices, superior quality and prompt service will always be appreciated by beekeepers.

Send a list of your requirements to us.

THE FRED W. MUTH COMPANY,
Pearl and Walnut Streets,
Cincinnati, Ohio.

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Pat. Counsel of The A. I. Root Co.
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A powerful portable lamp, giving a 300 candle power pure white light. Just what the farmer, dairyman, stockman, etc. needs. Safe—Reliable—Economical—Absolutely Rain, Storm and Bug proof. Burns either gasoline or kerosene. Light in weight. Agents wanted. Big Profits. Write for Catalog. **THE BEST LIGHT CO.**
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LEWIS 4-WAY BEE ESCAPES



Four exits from supers. Fits all standard boards. Springs of coppered steel. Made of substantial metal. Price each 18c prepaid. Made by **G. B. LEWIS COMPANY, Watertown, Wis., U. S. A.**
For Sale by All Dealers.

Honey Containers

We have some interesting prices to offer on honey containers; send us a list of your requirements and let us quote you our prices.

- 2½-lb. cans in reshipping cases of 24 and crates of 100 and 500.
 - 5-lb. pails in reshipping cases of 12 and crates of 100 and 200.
 - 10-lb. pails in reshipping cases of 6 and crates of 100.
 - 1-gallon square or oblong cans with 1¾-inch screw cap in boxes of 6.
 - 1-gallon square or oblong cans with 1¾-inch screw cap in crates of 100.
 - 60-lb. square cans with 1¾-inch screw cap in cases of 2 cans.
 - 16-oz. round glass jars in reshipping cases of 2 dozen.
 - 6½-oz. tin top tumblers in reshipping cases of 4 dozen.
 - Shipping cases for comb honey for any style sections in the 24-lb. or 12-lb. size.
- Send for our catalog showing full line of Bee Supplies.

AUGUST LOTZ CO.
BOYD, WISCONSIN.

HONEY MARKETS

U. S. GOVERNMENT REPORTS.

Information from Producing Areas (First half of August).

CALIFORNIA POINTS.—Southern California: Demand and movement light, market steady. Some beekeepers holding for higher prices. General price in carload lots for outside shipments, usual terms basis, per lb., extracted white orange 9½-10c, white sage 8½-9c, light amber alfalfa 5¼-6c, light amber sage mostly 7c.

Northern California.—Demand and movement light. New crop reported to be of fair size but not yet on market in sufficient quantity to stabilize prices. Prices f. o. b. San Francisco in carlots range, per lb., water white sage 9½c, white sage 9c, light amber sage 7½-8c, light amber alfalfa 6-6½c. Hawaiian honey quoted per lb., f. o. b., San Francisco, water white 6½c, light amber 5½c, dark amber 5¼c, honeydew honey 3¼c.

INTERMOUNTAIN REGION.—Crop in this territory decidedly spotted. Good honey flow reported in northeastern Colorado and eastern Washington, but most producing areas are said to be securing less than average yields. Parts of Utah and Idaho report poorest crop outlook in years, due to grasshopper infestation, large army crickets, wild bees and drouth; others report good yield. The weather has been too cool in northern sections to permit best nectar secretion.

Demand reported rather quiet, with little marketed to August 1. Some carlots white extracted offered at 8½c per lb., with few sales. Small lots generally selling higher. Some beekeepers said to be accepting 7½c per lb. from nearby dealers for white to water white, but most are holding for higher price. White comb reported purchased at \$3.75-3.85 per case for white and \$3.50 for light amber.

In Salt River Valley, Arizona, the flow of honey is reported very erratic. Only fair crop expected, but flavor and color are said to be unusually good. Surplus to date chiefly secured from alfalfa; little gathered from cotton. Car cats'aw reported sold, 8½c per lb. for water white and 6½c for light amber.

PACIFIC NORTHWEST.—Bees reported building up well for winter. In some of the apple sections nectar flow said to be very heavy, with surplus of 200 lbs. per colony secured; in other sections surplus of 50-75 lbs. is considered average. As usual, spray poisoning has proved destructive to bees in some sections. Sales in 60-lb. cans reported ranging 11¼-15c per lb.

TEXAS POINTS.—As the long drouth continues, the crop outlook becomes increasingly less promising; Crop estimated less than one-third normal. Many beemen are reported to be leaving all honey on the hives to provide for winter needs. If rain should come, some surplus may be secured for extracting. Cotton said to be about only plant from which honey is being secured. Poison used for boll weevil does not seem to affect bees.

Prevailing prices for 60-lb. cans white extracted, 2 cans in case, 7½c; 6/10s, 8½c per lb.; amber extracted 2/60s, 6½c. White chunk honey, 6/10s, 13½c; 12/5s, 14½c per lb. Beeswax 22-23c per lb.

EAST CENTRAL AND NORTH CENTRAL STATES.—Reports are general that, due to drouth, cool weather and cool winds, the crop has been less than anticipated. Many beekeepers, however, have had a continuous light yield all summer, sufficient to keep queens laying. Goldenrod flow should commence yielding late in August.

Honey seems to be moving slowly as yet. Two carloads white clover extracted in 60-lb. cans reported sold at 11c per lb. Other large lot sales range 10-12c, with small lots in 60-lb. cans moving up to 15c per lb. Sales of dark amber reported at 7½-8c per lb. Some small-lot sales No. 1 white clover comb reported at \$3.50-4.00 per 24-section case, others quoted up to \$6.00 per case.

PLAINS AREA.—Main flow is generally over, although recent rains are prolonging it in some sections. Hubam sweet clover said to be still yielding well. Quality reported unusually good, with crop about average.

Carlot inquiry reported light, but some honey being sold locally. One carlot sale of clover reported at 11c per lb., with other sales in 60-lb. cans, ranging 10-15c. Few sales comb reported \$4.80-5.00 per 24-section case.

NORTHEASTERN STATES.—White honey crop in New York about 50% (reports range from 25 to 65%) normal. Pennsylvania crop reported about one-third. Buckwheat is in bloom in Pennsylvania and bees should gather nectar from it continuously until frost. In New York the buckwheat crop was sown the latest in years, and fears are expressed that the honey yield will be light. Comb honey crop said to be smaller than average in spite of big return to its production this year. Some Pennsylvania apiaries changing hands at about \$4.00 per colony.

Carlot sales of white clover extracted reported at 10c per lb., with small lots in 60-lb. cans at 12c, and amber honey at 7c per lb. Carlots of white clover comb are reported moving at \$5.00 per 24-section case, with small lot sales \$4.80-6.00. Some beekeepers selling to nearby dealers at 10c per lb. for white clover extracted, 6c for dark, and \$4.50 per case for white clover comb.

Telegraphic Reports from Important Markets.

BOSTON.—1 car California, 8 cases Vermont and 50 cases New York arrived. Demand light, which is usual at this season. Comb: Practically cleaned up, few sales reported of new crop New York in 24-section cases at \$5.50-5.75. Extracted: Sales to confectioners and bottlers, Cuba and Porto Rico, amber 80-85c per gal. California, white sage 14-16c, light amber sage 12-14c per lb. Broker quotations, for August and September shipments, delivered Boston basis, California light amber alfalfa 7c, white sage 10-11c.

CHICAGO.—No fresh carlot arrivals. Supplies moderate. Movement active last week with cool weather prevailing, but last few days rather slow with return of hot weather. Market holding generally steady. Extracted: Sales to bottlers, candy manufacturers and bakers, California and Nevada per lb., light amber mixed mountain flowers and some straight alfalfa 8-9c, with occasional sale low as 7½c. Nevada and Montana, white sweet clover and alfalfa 9½-11c, mostly around 10c. Comb: Sales to retailers, Iowa and Colorado, sweet clover and mixed sweet clover and alfalfa No. 1 heavy \$4.00-4.25. Beeswax: Moderate receipts. Market holding firm with fair trading. Sales to wholesale druggists and laundry supply houses per lb., Colorado, California and Utah, light 29-31c, dark 25-28½c; Central and South American, light 23-27c, some very best 29c, dark 20-23c.

KANSAS CITY.—No carlot arrivals since last report. Supplies light. Demand and movement light market dull. Extracted: No sales reported. Comb: Sales to jobbers, Colorado, 24-section cases, alfalfa light weight No. 1, old stock \$4.00. Missouri, 24-section cases, white clover heavy No. 1, new crop \$5.50.

NEW YORK.—Domestic receipts very light, foreign receipts limited. Demand and movement light, market rather dull. Extracted. Spot sales to jobbers, wholesalers, confectioners, bakers and bottlers, domestic, per lb., California, light amber alfalfa 7½-8½c, light amber sage 8-9c, white sage 10½-11c, white orange 11½-12½c. Intermountain section, white sweet clover 10½-11c. South America and West Indies, refined 60-70c, mostly 65c per gal. Beeswax: Foreign receipts limited. Demand limited, movement light, market steady. Spot sales to wholesalers, manufacturers and drug trade, per lb., South American, Chilean, and Brazilian, light, 28-30c. Cuban, light 28-29c, dark 22-25c. African, dark mostly 23-25c.

ST. LOUIS.—Demand and movement very slow and draggy, market very dull. Comb: Sales to wholesalers and jobbers. 24-section cases Minnesota, white clover No. 1 medium \$4.50-5.00. Extracted: Sales to wholesalers and jobbers, California, 5-gal. cans light amber alfalfa 7½-7¾c per lb. Beeswax: Ungraded average country run quoted nominally 25c per lb. to jobbers.

H. C. TAYLOR.

Chief of Bureau of Markets.

Special Foreign Quotation.

LIVERPOOL.—Extracted honey is worth about nine cents per pound in American currency; bees-

wan about 29 cents per pound. Taylor & Co.
Liverpool, England, Aug. 2.

The A. I. Root Company's Quotation.

Since our last quotation we have paid the following prices in carlots f. o. b. shipping points: Water white extracted white clover, from local producers, with low freight rate, 10½¢ per lb.; Idaho white clover with trace of sweet clover or alfalfa, 8½¢; water white alfalfa, 7¢; water white sage, 9¢; water white orange, 9½¢; white mesquite, 6¢; and light amber mesquite, 5½¢; white sweet clover or alfalfa comb honey, fancy, \$3.75 per case; No. 1, \$3.50; and No. 2, \$3.25. These comb-honey quotations are on a basis of \$4.50 per case for fancy laid down in Medina; \$4.25 for No. 1, and \$4.00 for No. 2. We have just at present sufficient stocks for our needs.

The Opinions of Honey Producers Themselves as Reported to Gleanings in Bee Culture.

Early in August we sent to actual honey producers and some associations the following questions:

1. What is the average yield per colony corrected to date this season in your locality? Give answer in pounds. (a) Extracted honey? (b) Comb honey.
2. How does this compare with the average yield for your location? Give answer in per cent.
3. What prices are producers being offered for the new crop at their stations in large lots? (a)

Extracted honey, per pound? (b) Comb honey, per case?

4. What are prices when sold to grocers in case lots? (a) Extracted honey in 5-lb. pails or other retail packages? (b) Comb honey, fancy or No. 1 per case?
5. How is honey now moving on the market in your locality? Give answer in one word, as slow, fair or rapid.

The answers as returned by our honey and bee reporters are as follows:

State.	Reported by:	Average yield.		Pct. of.	In large lots.		In case lots.		Movement.
		Extr.	Comb.		Nor. Y'd.	Extr.	Comb.	Extr.	
Alabama.....	W. D. Achord.....	10....	25....	..	..	..	..	\$0.60..	Fair
Alabama.....	J. M. Cutts.....	..	0....	..	..	..	..	..	Slow
Arkansas.....	J. Johnson.....	..	24....	100...	..	\$4.80..	75..	5.00..	Slow
Arkansas.....	J. V. Ormond.....	..	..	150...	20..	6.00..	..	..	Slow
British Columbia.....	W. J. Sheppard.....	100...	..	200...	..	..	..	1.35..	Slow
California.....	G. Larin.....	70....	..	120...	..	..	..	..	Slow
California.....	M. C. Richter.....	20....	0....	15....	10..	..	1.50..	..	Fair
California.....	M. A. Saylor.....	25....	15....	100...	..	4.00..	75..	4.80..	Fair
California.....	M. H. Mendleson.....	55....	22....	..	..	..	85..	5.75..	Fair
Colorado.....	J. A. Green.....	50....	30....	50....	..	3.50..	70..	4.25..	Slow
Colorado.....	B. W. Hopper.....	40....	10....	50....	..	..	50..	4.50..	Slow
Connecticut.....	A. Latham.....	30....	45....	125...	..	..	..	..	Slow
Connecticut.....	A. W. Yates.....	20....	20....	30....	12..	5.25..	90..	7.00..	Slow
Florida.....	C. C. Cook.....	90....	..	175...	10..	..	75..	..	Fair
Florida.....	H. Hewitt.....	55....	..	125...	07..	..	65..	..	Slow
Florida.....	W. Lamkin.....	75....	..	125...	08..	..	65..	..	Slow
Georgia.....	J. J. Wilder.....	70....	50....	110...	10..	4.00..	75..	5.00..	Fair
Idaho.....	J. E. Miller.....	60....	20....	50....	07..	..	50..	5.50..	Fair
Illinois.....	C. F. Bender.....	..	46....	100...	..	4.80..	..	5.50..	Fair
Illinois.....	A. L. Kildow.....	75....	50....	125...	..	..	1.00..	6.00..	Slow
Indiana.....	T. C. Johnson.....	75....	60....	125...	..	..	90..	5.50..	Slow
Indiana.....	J. Smith.....	25....	..	100...	..	..	1.00..	..	Fair
Indiana.....	E. S. Miller.....	50....	30....	60....	..	..	1.00..	6.00..	Fair
Iowa.....	E. G. Brown.....	100...	..	100...	10..	..	75..	4.50..	Good
Iowa.....	W. S. Panghurst.....	110...	..	80....	..	..	80..	5.75..	Fair
Kansas.....	J. A. Ninninger.....	75....	50....	100...	..	..	75..	5.50..	Slow
Kansas.....	C. D. Mize.....	60....	50....	100...	..	..	75..	5.00..	Slow
Maryland.....	S. G. Crocker, Jr.....	40....	30....	60....	..	..	1.00..	6.00..	Slow
Massachusetts.....	O. M. Smith.....	10....	..	25....	..	..	..	..	Slow
Michigan.....	I. D. Bartlett.....	75....	50....	100...	..	..	75..	4.75..	Slow
Michigan.....	L. S. Griggs.....	100...	60....	120...	10..	..	1.00..	6.00..	Slow
Michigan.....	F. Markham.....	80....	50....	80....	12..	5.00..	80..	5.50..	Fair
Missouri.....	J. W. Romberger.....	90....	80....	90....	15..	5.00..	75..	5.50..	Slow
Missouri.....	J. H. Fisbeck.....	80....	..	120...	..	..	..	..	Slow
Nevada.....	T. V. Damon.....	50....	30....	50....	06..	3.50..	..	..	Slow
New Jersey.....	E. G. Carr.....	10....	25....	..	..	..	..	..	..
New York.....	F. W. Lesser.....	30....	15....	33....	..	..	..	4.80..	Slow
New York.....	Adams & Myers.....	30....	10....	50....	10..	5.00..	1.00..	6.00..	Fair
North Carolina.....	W. J. Martin.....	75....	50....	90....	08..	4.50..	1.00..	..	Fair
North Carolina.....	C. S. Bumgarner.....	..	..	..	..	..	..	..	Fair
Ohio.....	F. Leiminger.....	78....	50....	75....	11..	4.80..	..	..	Good
Ohio.....	R. D. Hiatt.....	70....	30....	60....	..	..	1.00..	5.50..	Fair
Ohio.....	J. F. Moore.....	75....	..	100...	11..	..	80..	4.20..	Slow
Oklahoma.....	J. Heuelsen.....	60....	..	100...	..	..	75..	..	Slow
Oklahoma.....	C. F. Stiles.....	30....	10....	80....	..	..	1.00..	..	Slow
Oregon.....	H. A. Scullen.....	75....	..	100...	..	..	85..	..	Fair
Pennsylvania.....	H. Beaver.....	40....	30....	100...	09..	4.25..	65..	4.50..	Slow
Pennsylvania.....	D. C. Gilham.....	40....	32....	110...	..	..	1.05..	7.20..	Slow
Pennsylvania.....	C. N. Greene.....	30....	20....	75....	09..	..	62..	..	Slow
Pennsylvania.....	G. H. Rea.....	20....	10....	30....	..	..	..	..	..
Rhode Island.....	A. C. Miller.....	25....	..	50....	..	..	1.25..	..	Slow
South Carolina.....	A. S. Conradi.....	..	50....	75....	..	..	1.25..	..	Rapid
Texas.....	T. A. Bowden.....	20....	..	35....	..	..	75..	..	Fair
Texas.....	J. N. Mayes.....	35....	35....	85....	10..	..	55..	..	Slow
Utah.....	M. A. Gill.....	80....	50....	80....	08..	3.60..	50..	4.25..	Fair
Utah.....	N. E. Miller.....	22....	..	33....	..	..	..	..	Slow
Vermont.....	J. E. Crane.....	75....	50....	110...	..	..	..	7.50..	Slow
Virginia.....	T. C. Asher.....	15....	12....	25....	..	..	1.10..	6.00..	Slow
Virginia.....	L. N. Gravely.....	48....	26....	..	12..	4.80..	75..	6.00..	Slow
Washington.....	G. W. B. Saxton.....	100...	..	100...	10..	..	..	..	Slow
Washington.....	W. L. Cox.....	125...	..	100...	..	..	90..	5.50..	Fair
West Virginia.....	T. K. Massie.....	10....	25....	55....	..	..	..	..	Fair
Wisconsin.....	N. E. France.....	100...	45....	200...	12..	4.56..	..	..	Fair
Wisconsin.....	E. Hassinger, Jr.....	65....	40....	100...	..	..	85..	..	Fair
Wisconsin.....	H. F. Wilson.....	75....	..	100...	13..	4.75..	95..	6.50..	..
Wyoming.....	A. D. Brown.....	60....	..	35....	..	..	85..	..	Slow

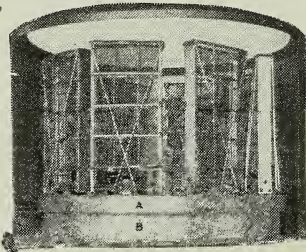
QUESTION—

Mr. H. L. Jenkins, Hamburg, Iowa, sent us his order for 100 cases of two 5-gallon cans, and saved \$21.00.

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COUNCIL BLUFFS, IOWA**

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Lewis-Markle Power Honey Extractor.
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A—Pan over machinery. B—Bottom of tank.

Made in 4 and 8 frame sizes. Accommodates 2 sizes of baskets, power operation, machinery underneath, no vibration, tank and basket instantly removable for cleaning. A commercial success. Circular free. Address:

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There's a Distributor Near You.

PAST AND GONE

Season of 1922



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Do not wait till you need the goods, but anticipate your needs so as to be prepared when next season arrives.



A. I. Root Co. of Syracuse, N. Y.

1631 West Genesee St.



NEW BINGHAM BEE SMOKER

PATENTED

The Smoker You Ought to Own

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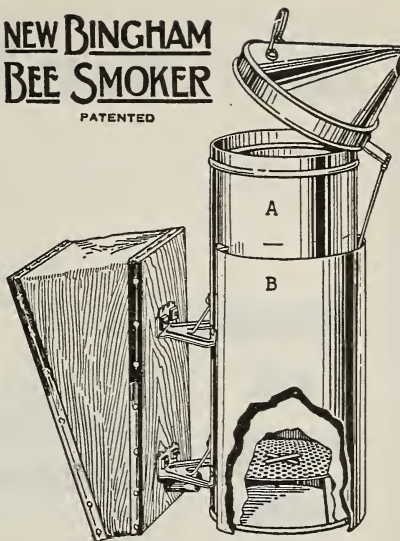
The new Bingham comes in six sizes, including the Big Smoke, which is furnished both with and without shield. The larger sizes are best, as they hold more fuel, give more smoke, require filling less often, and are especially recommended to those who work with their bees several hours at a time.

Write for our complete catalog of bee supplies and accessories. Special circular of all sizes of Bingham Smokers free for the asking.

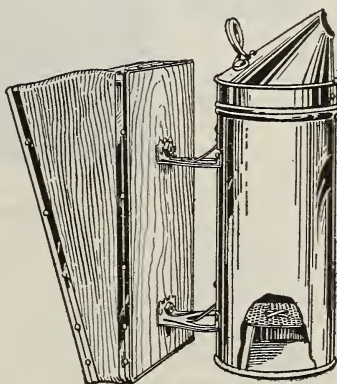
A. G. WOODMAN CO.

238 Scribner Ave., N. W.

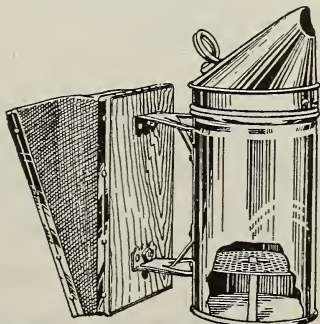
GRAND RAPIDS, MICH., U.S.A.



BIG SMOKE—With Shield.
Fire Pot, 4 x 10.



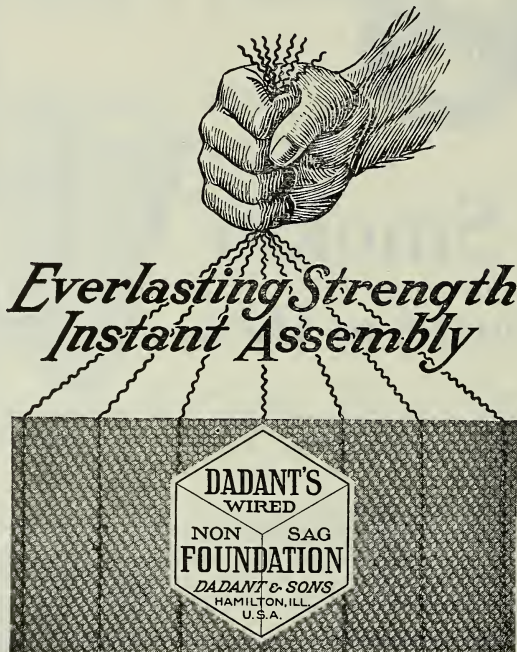
CONQUEROR.
Fire Pot, 3 x 7.



LITTLE WONDER.
Fire Pot, 3 x 5½.

Dadant's Wired Foundation is Sag-Proof

Reinforced
with
Radiating
Shoulders
of
Strength



The
Finished
Comb
a
Delight
to
the Eye

HERE IS THE EVIDENCE.

KENTUCKY

I have tried Wired Foundation this year under exactly the same conditions and surroundings, as far as I could tell, with foundation that was wired horizontally. Every frame of the old-style foundation sagged badly and the Wired Foundation made perfect combs. I call it the greatest improvement modern beekeeping has had for many years.—P. C. W.

IOWA

I believe this foundation will prove a labor-saver. It can be inserted in a short time. Wiring frames is sure a tedious job at best. There is no sag in the foundation. I threw them quite hard in extracting and for new combs they stood up fine.—B. A. B.

WASHINGTON

There has been absolutely no sagging or stretching of cells. There is no question in my mind that this method of wiring foundation is a great step in advance of the old horizontal method, and these vertically wired combs are the best combs I have in my yard.—A. E. B.

TEXAS

We are glad to say that we have thus far gotten 93-per cent absolutely perfect combs. We have seen no evidence of vertical sagging.—E. G. L.

DADANT'S WIRED FOUNDATION may be used in new-style split bottom-bar frames or in the old-style one-piece bottom-bar frames with equal satisfaction. It is also adaptable to any size and style of brood or extracting frame.

COSTS NO MORE. Since Dadant's Wired Foundation cuts the cost and labor of wiring, its extra price of three cents per pound above the catalog prices of old-style foundation is thus more than returned to the beekeeper.

BEESWAX.—We need large quantities of beeswax and are paying good prices now. Ship to us at Hamilton, Illinois, or Keokuk, Iowa, or drop us a card and we will quote f. o. b. here or f. o. b. your own station as you may desire.

Wired Foundation is sold by all distributors of Lewis "Beeware" and Dadant's Foundation. Send them your orders.

DADANT & SONS, HAMILTON, ILLINOIS

GLEANINGS IN BEE CULTURE

SEPTEMBER, 1922

EDITORIAL

THE hearing on the Isle of Wight Disease Bill before the Agricultural Committee of



The Isle of Wight Disease Bill.

the Senate was held on Aug. 2, when the bill was reported out unanimously by the committee for enactment.

Up to the time of going to press no word has been received as to the passage of this bill by the Senate.



IN an article in the August 10th issue of *Modern Farming*, Chas. F. Leach advocates



Hubam for Winter Pasture in the South.

the use of Hubam as a winter pasture crop for the South. He plants it even in the most acid

soil, but first puts on enough lime to insure a good growth of Hubam. He says:

For winter pasture in the lower South, or for an early hay crop, no plant so far discovered can equal Hubam.



THE United States Department of Agriculture has just issued Department Circular



A New Circular for Beekeepers.

222, "The Insulating Value of Commercial Double-Walled Beehives," by E. F. Phillips, which gives the re-

sults of tests of the escape of heat from different makes of double-walled hives. Beekeepers will be especially interested in the results when double-walled hives, having an air space between the walls, were compared with those in which the space was filled with sawdust, the difference of course being in favor of the packed hives. The tests also show a great loss of heat through the bottom when the bottom is not packed.

Most beekeepers now recognize this weakness in double-walled hives without bottom packing, and in building winter packing cases are providing for bottom packing. This of course makes less difference when the hive-stand is so arranged that the air can not circulate under the hive or where the snow is well banked up at the sides.

The circular also gives a table showing the comparative insulating value of various materials used for packing.

This circular can no doubt be obtained free as long as the supply lasts, by writing to the Bureau of Entomology, Washington, D. C., asking for Department Circular 222.

IN the clover region new honey appeared on the market several weeks earlier than



Honey Crop and Marketing Condition.

usual. Unfortunately some of this new crop was offered in the midst of the heaviest fruit and

berry season this country has had for several years. Instead of waiting until these were out of the way, as advised in these columns last month, many beekeepers having honey for sale have forced it upon an unwilling market by reducing the price, in some cases to a figure lower than the dealers would have been willing to pay for honey in carload lots. The amount of honey that has been crowded on the market in this way is small, but it has already had the effect of depressing the market and causing dealers to expect still lower prices. Of course the railroad and coal strikes have also had a depressing effect upon the market.

Since honey is not a perishable product in the same sense as fresh fruits and vegetables, it is entirely unnecessary to dump it at a sacrifice on the market as soon as it has been harvested. A stabilized market for honey is better for both producer and dealer. The further we can get away from a speculative honey market, the better for all concerned.

The sensible thing in marketing is to collect all the data possible as to the amount of honey produced as well as the probable buying power of the public, and then establish and maintain a price that will move the crop before the new crop comes on next year. Gleanings is doing all it can to put before its readers all available facts as to the crop and market conditions. According to the statistics thus far known, we have this year a crop of honey only slightly greater than last year, with but little of last year's crop remaining unsold. The total amount of honey in the country at this time is no doubt less than it was a year ago when a large amount of honey had been carried over from the previous year. In the light of these facts and judging by what was accomplished last year in disposing of honey, it would seem that careful but aggressive marketing should result in cleaning up this year's crop without selling at a sacrifice.

See the articles on this subject by H. H. Root and E. G. LeSturgeon in this issue.

MANY producers seem to think that their responsibility ceases when they have sold



Helping the Grocer Sell Honey.

and received the cash in payment for the honey. It is true that the responsibility for re-selling is shifted to the dealer when he buys the honey, but the producer can not afford to lose interest in the ultimate sale to the consumer just because he has been able to induce a dealer to buy his honey and turn over the cash for it. It should be remembered that the honey is not really sold until the consumer buys it.

Those who supply their local grocers with honey in case lots should help the dealer dispose of it so that he will be ready to buy more when his stock runs low. This can be done by display advertisements in the local papers, by window displays and by seeing that the honey is so conspicuously located in the store that it will be seen. The retail grocer is not necessarily a salesman. He hands over the counter what the people ask for. It is not his business to create a demand for honey any more than for any one of the many other items in his store.

The grocer is able to distribute the beekeeper's honey to consumers cheaper than anybody else can do it but he should not be expected to assume the responsibility of creating a greater demand for honey.



THE Ohio Agricultural Experiment Station, Wooster, Ohio, has published a bulletin (No. 357) on the dis-



Bees Help in Control of Fireblight.

semination of fireblight, written by H. A. Gosard and R. C. Walton, which is of interest to beekeepers. The authors have made an exhaustive study to determine to what extent honey bees may be carriers of fireblight, and while they found that they are capable of carrying the blight just as many other agencies do, their studies have revealed that honeybees also play an important part in the control of this disease by promptly pollinating the blossoms, thus carrying them quickly past the period of susceptibility to blight.

The following extract from the bulletin certainly speaks well for the honeybee:

There would apparently be some disastrous blight years if no honey bees were in existence, and from our researches (p. 108) we believe it is fair to infer that in the early part of the blooming season bees do not scatter much blight, but by promptly pollinating the blossoms as fast as the stigmas ripen, hurry such fruit past the period of susceptibility to blight, so that in about three days after pollination, such blossoms or fruits will scarcely blight at all. This explains why it is that orchardists who also keep numerous stands of bees have full crops of fruit, even when blossom blight is very bad. While it seems to be true that bees are among the most effective disseminators of blossom-blight toward the end of the blossoming period, this may in large measure be condoned or in some cases regarded as advantageous, since their work in killing the blossoms will reduce the work of thinning, an operation that may be necessary if too many fruits have set.

IN a letter of appreciation of the response of beekeepers in raising a fund for the



Mrs. Miller Expresses Appreciation of Miller Memorial Library Fund.

Miller Memorial Library Mrs. Miller adds the follow-

ing paragraph, which the Editor has asked permission to publish:

We are very much gratified over the report of the Memorial Fund. The beekeepers have done so well.

Although the one who made this the most beautiful spot on earth for us has gone, we are still living here, trying to do the things we think he would want done. With kindest regards from Miss Wilson and myself,

Very sincerely yours,
Mrs. C. C. Miller.



THE committee in charge of the Miller Memorial Fund has decided to locate the Me-



The Miller Memorial Library to be Located in the University of Wisconsin.

Miller Memorial Library at the University of Wisconsin.

sin. Among the other institutions considered by the committee were Cornell University and the Iowa Agricultural College, but the committee finally voted unanimously to locate the memorial at the University of Wisconsin.

In many respects this is an ideal location for this library. H. F. Wilson, Professor of Beekeeping at the university, who by the way is also a practical honey producer, has been interested for some time in a beekeeping library for the university. Such a library being one of his hobbies, his enthusiasm as well as the thought he has already put into the library idea will now be of great value to the Miller Memorial Library. Being on the ground and in close touch with its affairs, he will naturally put into this his very best effort, and as long as he is connected with the University, beekeepers may rest assured that the Miller Memorial Library will be well cared for.

The University of Wisconsin is a rapidly growing institution in a state whose citizens are progressive and who take great pride in their educational institutions. Being located at Madison, Wis., this library of beekeeping will be in the midst of the great white clover region of the United States and Canada, as well as near the center of population in the United States. Madison is only about 70 miles from Marengo, Ill., where Doctor Miller worked out so many of the beekeepers' problems. It at least seems fitting that this memorial is to be located so near the home of the man whose memory it is to perpetuate.

The funds that have been collected, as well as any additional contributions that may be made, are to be turned over to the University to be invested, only the income from the investment to be used for the building up and maintenance of the library. The University, we understand, will furnish

space for the library and have complete management of its affairs.

One great advantage of this kind of memorial over a monument of stone or something of that character is its flexibility. Contributions of books and money can be sent at any time. The library will no doubt be small at first; but, as time goes on, in addition to the books purchased from the income on the funds invested, contributions will be added indefinitely. Again, since the money that has been collected is to be invested in safe securities, and only the income used, this memorial should endure as long as libraries exist in the world.

The committee, in completing this phase of its work, deserves the gratitude of the beekeepers of the world. Gleanings is hoping that this committee will not consider its work as complete when the agreement with the University is written and the funds turned over. Its members can still do much to encourage donations of money, books, papers and service from those who can contribute in any way to build up a great library of beekeeping for the whole world at the University of Wisconsin.



THE heavy consumption of stores for brood-rearing during the latter part of the honey flow, when producing extracted honey, is sometimes quite a



Useless Consumers in Extracted-Honey Production.

problem. Colonies run for comb honey usually begin to crowd the queen with honey during the latter part of the honey flow, thus restricting brood-rearing; but, for extracted honey, most of the honey is carried into the supers, leaving plenty of room for the queen in the brood-chamber.

If the early honey flow is followed by a later one, as in some parts of the buckwheat region, this extra brood-rearing works out to the profit of the beekeeper, for the resulting bees become producers during the later honey flow. In localities which do not have a fall honey flow and especially where the main honey flow is followed by a complete dearth of nectar, as is too often the case in portions of the clover region, the rearing of so much brood late in the honey flow results in a loss, for the workers reared during the latter part of June and July are too late to take part in gathering the honey crop and too early for winter bees. Not only has it cost four pounds or more of honey for each frame of brood reared, but these bees must live even though they do not work, and of course consume considerable honey during their lifetime.

A striking example of what happens when brood-rearing is carried on at full speed to the end of the honey flow came to the Editor's attention this season. Colonies run for extracted honey forged ahead of those run for comb honey in the same location, so

that during the honey flow it seemed they would store at least twice as much honey as the colonies storing comb honey. The honey to be extracted was left on the hives until late in July, about three weeks after the honey flow had closed. During this time the bees had consumed so much of the honey that the yield of extracted honey per colony was about the same as the yield of comb honey from the other colonies.

But what is worse, the colonies operated for extracted honey had practically no honey in the brood-chambers at the close of the season, while the comb-honey colonies had their brood-chambers heavy with honey. When this honey in the brood-chambers is counted, the comb-honey colonies actually produced more than those for extracted honey because they had consumed less. This of course is an extreme case, but in some localities something like this occurs often enough to become a serious problem. Fortunately, the second crop of red clover yielded a little this season, and the colonies used to produce extracted honey may gain enough to go again ahead of the comb-honey colonies because of their greater strength.

It is not often that colonies ever become too strong, but in many cases it would be better if brood-rearing were restricted at least during the latter half of the main honey flow, provided there is no later honey flow. Colonies that are extra strong in July and August usually go down to normal winter strength, and, if these extra bees were not useful in gathering nectar, they were reared at a loss.

Whether it will pay beekeepers to restrict brood-rearing when the resulting bees can not become producers is questionable because of the uncertainties of the seasons. If brood-rearing were restricted this season, an unexpected later honey flow might make the beekeeper wish he had left the colonies alone.

Where one can be certain that further extensive brood-rearing is undesirable, the apary can be requeneed by killing the old queen and giving a ripe queen-cell, thus bringing about a break in brood-rearing during the latter part of the honey flow. In many localities the saving of stores brought about by this break in brood-rearing should more than pay for the labor of requeneing, giving the advantage of young queens for the next year without cost.

When the queens are permitted to have free range in the hive previous to the honey flow and perhaps during the first week of the honey flow and then put below the excluder, there is sometimes a great restriction in brood-rearing because of the pollen in the combs in the lower story. The bees are slow about removing pollen to make room for brood-rearing, so that such colonies sometimes rear even less brood at this time than do comb-honey colonies. This may be advantageous in some localities, but of course would be a great disadvantage wherever there is a fall honey flow.

THE MERCHANDISING OF HONEY

An Analysis of the Costs of Distribution. How Beekeepers Can Help by Selling Locally

By H. H. Root

A T a field meeting of New York beekeepers at Venice Center, Aug. 4, George B. Howe, speaking of the highly important subject of honey selling, hit the nail squarely on the head when he said the whole situation would be taken care of if each honey producer asked himself the question, "Am I my brother's keeper?" No producer can afford to overlook the fact that his neighbor has the right to sell his honey at a fair price. No producer can ignore his neighbor and live unto himself alone.

The rail and coal strikes have created distrust and unrest on the part of merchants, resulting in a temporary lull in the buying of everything except staple articles of food. Since the per capita consumption of honey a year is still around two pounds, honey comes in the class of luxuries, and merchants are showing an unwillingness to stock it as they ordinarily do at this time of the year. They wish to wait until some of these uncertainties are cleared up.

For fear that this temporary condition may cause some producers to grow panicky and to offer their honey at a price unfair to themselves and manifestly unfair to their neighbors, this article is written. This is not a time to fly into a senseless panic; this is not a time for alarm over the sale of this year's honey crop to the extent of dumping the honey upon an unwilling market at a price near or below actual cost. This is a time for calm reflection and for constructive, consistent and continuous effort on the part of producers towards increasing the consumer demand for this safest and most delicious of all sweets. On the producers themselves a grave responsibility now rests. Mistakes, that in normal times might pass almost unnoticed, will now prove costly. Errors in carrying out the principles of true salesmanship will now react with telling emphasis against the very life of the whole industry.

Retail, Wholesale and Jobbing Prices.

Too many original producers of food of all kinds, including honey, through ignorance or carelessness, often forget one of the oldest laws known to trade, the legitimate difference in the retail, wholesale and jobbing selling prices. It seems hard to believe and yet many cases have been reported of beekeepers selling a quantity of honey to all the grocers in a town, and then proceeding to peddle honey in the same packages at the same price to these grocers' customers in the same town. No more flagrant violation of the principles of salesmanship could be made.

The larger the quantity sold of any item the lower the price can be per item; so, the

greater the volume sold, the smaller the discounts can be to the wholesale and jobbing trade. In other words, the greater the turnover, the less difference there is between wholesale and retail prices.

Take for example an article which sells in great volume—granulated sugar. The turnover is extremely large, as proven by the per capita consumption of 94 pounds of sugar in a year. Because of the volume handled the discount can be relatively small; in one particular case sugar was retailing at \$8.00 per cwt., wholesaling at \$7.65 and jobbing at \$7.30. The retailer in this case was making only $\frac{1}{4}$ cent per pound—about 4.3%.

A well-known breakfast food, retailing at \$4.30 a case, wholesaled for \$3.65 a case. The grocer made 65 cents on a case, or a little over 15%.

A widely advertised table syrup retailed at \$3.30 a case. It wholesaled for \$2.75, the difference being 55c on a case, or 16 $\frac{2}{3}$ %.

Evaporated milk that retailed for \$4.80 wholesaled at \$4.00, the grocer, therefore, making 80c on a case. Here again the difference was 16 $\frac{2}{3}$ %.

On an article not enjoying so large a sale, preserves, the retail price was \$3.00, the wholesale \$2.40, the difference, 60c, amounting to 20%.

The figures given above are not intended to be taken as an average, but are merely specific instances of well known foods on the market, no attempt being made to ascertain all of the packages in each separate line to determine what the average is.

Without stopping to go further with these illustrations, let us now turn to honey, confining our attention first to comb honey. According to the United States Government Market Reports, the price of comb honey to retailers, that is, the wholesale price, varies considerably, as might be expected, owing to the locality, distance from market, and the quality of the honey. Take the wholesale price, for example, of \$4.80 for a 24-section case, reported for the East Central and North Central states in the August Gleanings. This is 20 cents per section. That honey may be retailed at 25 cents a section, or \$6.00 a case, the difference between the wholesale and retail price being 5c per section, in other words 20% of the retail price. (Confusion sometimes arises over what is meant by such discount. This 5c means that the retail price is 25% above the wholesale price, but it also means that the wholesale price is 20% under the retail price—in other words the retailer is making 20% of his selling price or 25% on his purchasing price.)

There is a great variation in the retail price of comb honey of practically the same

quality. One retailer buying this honey at \$4.80 a case will retail it at 30c a section instead of 25c, securing \$7.20 for the case instead of only \$6.00. His profit then is 10c a section, or 33 $\frac{1}{3}$ % of the selling price. Some retailers expect even a higher margin on comb honey, because of the loss from leakage or improperly graded honey. Comb honey varies so much that it is a difficult matter to establish anything like a standard selling price, either jobbing, wholesale or retail. I wish to emphasize that comb honey, not selling in anything like the volume that most breakfast foods, table syrups, etc., do, should be and is sold at a higher margin.

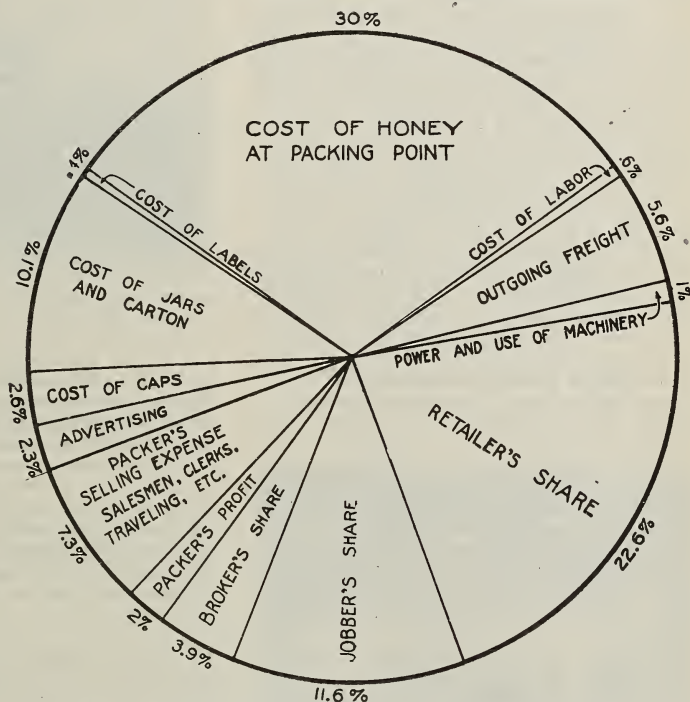
Now what is true between the retail and wholesale price is also true between the wholesale and between the jobbing and between the jobbing and producers' price. The larger the volume of sales, the smaller the profit per case may be.

If honey is selling in carlots at 12c a pound, a roadside seller should not retail honey by the roadside at only a cent or two cents above the price in carlots. Or speaking of comb honey, if the price of comb honey in carlots is \$4.50, a roadside seller should not sell that same comb honey at \$4.75 or \$5.00 a case. It costs perhaps \$1.00 a case to sell comb honey in a small way. The 25c or 50c, as may be, cannot begin to pay the cost of making the sale. Frequently the bare cost of selling an article is around 25% of its first cost. The cost of selling must be taken into consideration when arriving at the selling price, whether it be retail, wholesale or jobbing.

Where the producer is selling direct to the consumer, he not only has the labor of selling, but he also runs the risk of losing the occasional bad account and he must secure the necessary publicity. All these costs should be taken into consideration. The consumer, as a rule, ought to be able to buy cheaper from a producer than from a retailer, for the consumer is thereby paying part of the expense himself, such as transportation charges, storage, etc. Neverthe-

less, it is a great mistake for the producer to retail honey by the section or by the jar, as the case may be, at anything like the price that he would sell to a wholesaler or even to a retailer. If it cost \$1.00 a case to retail comb honey, that dollar should certainly be added to the selling price. Too many producers forget this, and not only lose the difference but they thereby jeopardize their own business in the future and that of their neighbors. Certainly they are not asking the question, "Am I my brother's keeper?"

It is not possible in the space allowed here to discuss fully the cost of canning or bottling honey. Generally speaking, the



This diagram shows where the consumer's dollar goes. The various costs given here are based upon honey packed in 14-ounce jars and distributed through the regular trade channels. The costs will vary for the different sizes of packages. In bottling for local trade only the broker's share, jobber's share and outgoing freight are eliminated, but the cost of advertising and other selling expenses, as well as labor and use of machinery, are increased.

smaller the package the greater the cost of that package in proportion to the cost of the honey. The above diagram shows how the consumer's dollar is divided when he buys honey in 14-oz. jars. If he buys in very small bottles, the cost of the bottles, labels, labor, selling costs, etc., are still greater in proportion to the amount of honey he receives, but in larger packages these items are proportionately less.

I have made the statement that this is the time for constructive, consistent and continuous effort in selling honey. I will

now go further and say that the lack of consistent and systematic effort has, in my opinion, very nearly brought on a crisis in the industry. I do not fear that we are getting back to where we were years ago when carloads of honey in increasing numbers were being held over; what I do fear is that the lack of real concern on the part of the producer toward increasing the consumer demand is standing in the way of fair prices to the producer for the product. I do not advocate a final retail price so high that the consumer will not buy. I do advocate continuous sales activity along the line of popularizing honey as a food.

What Is the Best Remedy for These Conditions?

Producers can do much to help matters in the immediate future. The old producer needs to get some of the unbounded enthusiasm for honey that the beginner in beekeeping has. We all know that the beginner talks honey in the daytime and in the nighttime, at home and abroad. He does it until he sometimes makes himself a nuisance, and yet his enthusiasm is such that he sells more than he himself can produce and has to buy from his neighbors. The industry in general will be helped when the greatest possible amount of honey produced in a given state or in a given locality can be consumed near by. When it costs two or three cents a pound to move honey in bulk from one part of the country to another and a greater amount still to move it again in bottled form, there is danger of piling up a transportation charge that is actually greater than the original cost of the honey. What is the use of doing a large business and making no profit? Why keep bees if the bees do not keep you? I firmly believe that only when the use of honey on the table becomes more popular will the producer make an adequate profit on his investment.

The following suggestions have all been

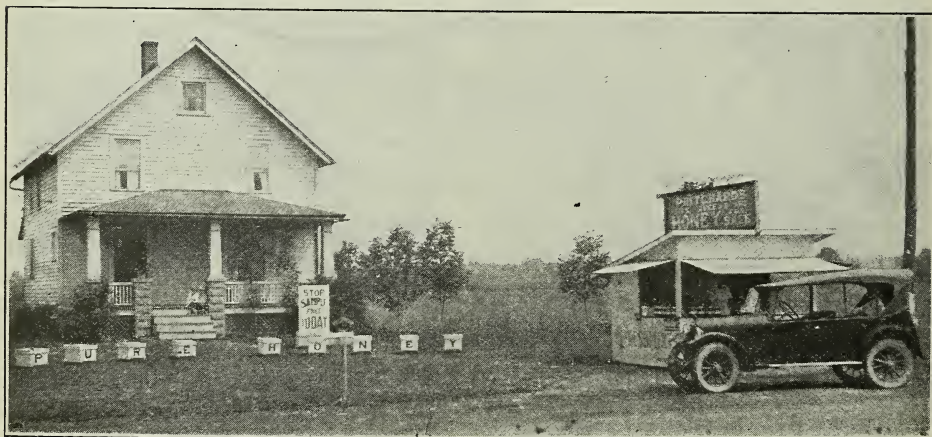
tried and proven. No one producer will attempt to put all of these into use. Many will be able to follow one or two of them.

Roadside Selling.

Roadside selling has done much to prevent honey from dropping in price to a dangerously low level. Gleanings has persistently called attention to the benefits, but not all producers realize what can be done. At one of the eastern field meetings reference was made to a producer who had established several roadside stands and had sold in all over 100,000 pounds of honey. All that is required is good honey in an attractive package, properly advertised by means of a neat yet conspicuous sign. The five and ten pound pails are very popular packages for roadside selling. Honey should be exhibited in glass, however, for some customers will not buy in tin, and all like to see the color of what they are getting. It is a good plan to have an attractive card announcing that the same honey is sold in tin at a lower price.

The producer need not live on a main highway in order to sell honey by the roadside. He can erect a small stand on the main highway, establish someone in charge and keep the stand supplied with honey by trips morning, noon and night. It is an advantage to live on the main highway, of course, right close to the selling stand, for considerable sales may be made on days when the automobile traffic is too light to pay to have someone at the stand all day. A sign, announcing that the blowing of the horn will bring an attendant, will take care of the trade on days when travel is light.

If the honey stand by the side of the road is near a beeyard, the bees help advertise, of course, and the venture is more likely to be a successful one than if no bees can be seen. If the apiary is too far away to be seen from the road, a colony or two back a few feet from the stand will serve almost as well.



Where sales are heavy a booth at the roadside adds greatly to the comfort of the salesman. Note the words "Pure Honey" on the beehives.

A common mistake at a roadside selling stand is having but one sign and that right in front of the stand. The rapidly approaching automobile is usually far beyond before the driver can stop. There should be an attractive sign several hundred feet away from the stand on each side, announcing that pure honey is on sale so many hundred feet ahead.

Talking Bees and Honey in Schools.

Any man or woman, *if interested in honey*, can talk honey at high schools. Simply take



White lettering on a dark background can be read at a greater distance than dark lettering on a white background.

a screened hive of bees right into the schoolroom and by lighting a smoker, get the curiosity of the boys and girls aroused to the very highest pitch. A few facts should be noted down beforehand to introduce the subject, and the questions that the boys and girls ask will pave the way for further remarks. Tell them that there are three kinds of bees, that the worker bees wear their wings ragged in a very few weeks so that they are no longer capable of producing at the highest efficiency. Explain that the queen can lay one and one-half times her own weight in eggs in 24 hours. Tell them that the drone has a grandfather but no father. Show that the sweet substance in flowers is not honey but a syrup resembling cane sugar, that the bees invert this into real honey, which is not a tax on the digestive system of the human being. Be sure to say that honey is the most healthful form of sweet and that it is the safest commercial sweet. If possible, have two or three kinds of honey, each properly labeled, that can be passed around for sampling on pieces of paper or cardboard. Explain that only one main honey-producing plant ordinarily is in blossom at one time. Lay especial emphasis on the particular honey that is produced largely in the locality.

After a pretty vigorous smoking of the bees through the screened entrance until they begin to roar, carefully pry up one side of the cover and blow in more smoke across the top. Be sure the smoker is working well and use it rather more frequently

than if the hive were being opened out of doors. Keep the bees down with smoke, while gradually loosening the frames. Lift out one of the central frames and look for the queen. When she is found pass up and down the aisles showing the queen and the bees, the brood, the honey, etc., to the students. A few bees fly about the room but, with a little care, no one need be stung.

What good does this do? An extensive producer in the West told me last winter that he shipped a car of honey to a certain city, intending to sell all of it at the stores. On his arrival he found the stores heavily stocked with local honey that was not moving well. He tried to sell his honey repeatedly but with little, if any success, until finally, seeing some children on the street, he allowed them all to sample his honey, and he began to tell them about the bees. Their eager questions gave him the idea of talking at the schools. He went to a member of the school board and told him that he would not do any direct advertising, but would just talk bees and honey if they would allow him half an hour in each of the schools. Obtaining his consent, he went to work. Within a few days honey began selling, and the stocks in the stores were exhausted. There was no difficulty in disposing of the entire car of honey.

It pays to create new users of honey. Children crave sweets. Teaching them to like honey is doing them a favor.

Demonstrate Honey in Stores.

Pick out one of the most prominent groceries and make arrangements for a good



An attractive roadside display commands attention.

window display of honey, with possibly a one-frame observatory hive containing the queen and a card underneath, reading, "Can you find the queen?" On a day when sales are likely to be the heaviest, or several days for that matter, "demonstrate" honey. Tell the story of honey, how pure it is, how healthful it is. Have some pictures, showing the process of extracting honey. Mix honey with butter, about equal proportions and give away free samples on crackers. The combination costs less than butter alone, and tastes better. Also give samples of straight extracted honey on crackers. If

you think you can afford it, have a freezer of ice cream and give away very small portions of ice cream on paper sauce-dishes, with a little extracted honey poured over the cream. Sometimes a near-by druggist can be induced to advertise a "Honey Sundae." If you have not tried this yourself, you have no idea how delicious it is. When giving out samples, secure the help of some young woman, dressed in white, to prepare the samples and to wait on the people.

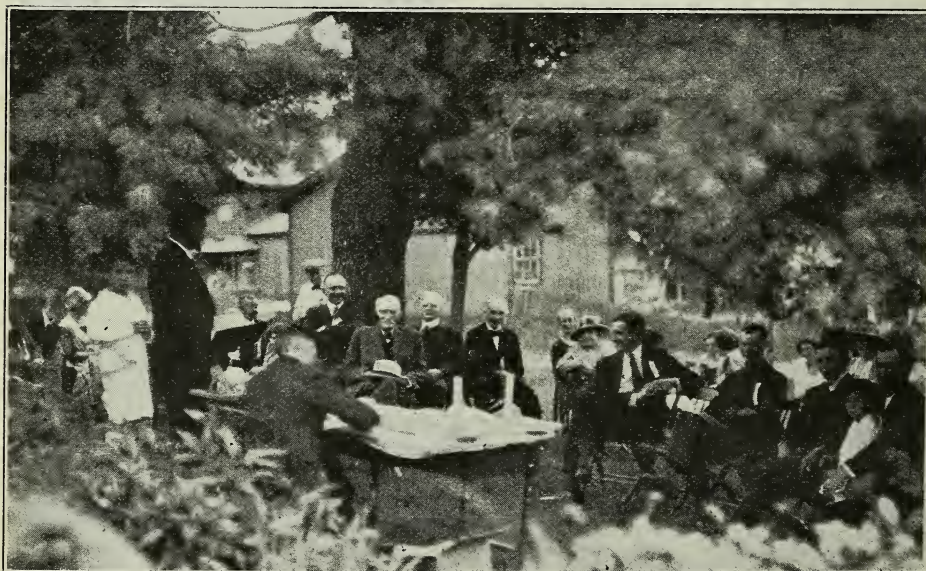
The Value of Local Associations.

The man who is the greatest menace to selling honey is the man (and every community has one or more of them) too careless to read bee journals and too indifferent to become a member of the beekeepers' or honey producers' association. I do not wish to give the impression that I am against national associations or state associations. They have their field, and rightly organized and managed, they accomplish great results. I do feel, however, that the importance of the local association has never been properly recognized. By local, I mean a county, or a community represented by two or three counties, or a part of a state. These local associations can accomplish almost unlimited good in many ways, not the least of which is the grading of honey, whether comb or extracted. It has always seemed to me that the dues of such an association should be large enough to make possible some work along this line. The secretary can know personally almost every member, and, if this secretary is wisely chosen, his official stamp of approval will go a long way with buyers, especially if the locality can be given some honest, sincere

publicity. If a state is small, a state association can function along this line just as well as a local association. I recall several instances where two counties have formed an association, which has done a very creditable piece of work. There are also tri-county associations, membership in which is a real asset to any beekeeper.

One producer can not do very much with a neighbor who persists in selling honey at too low a price. An association, on the other hand, can most effectually meet this problem. Right now I know of one instance where a local association is getting after a producer (not a member of that association, not a reader of bee journals, therefore not very well informed on market conditions), who is peddling excellent white clover honey in five and ten pound pails at 10c a pound, a most glaring example of the folly of retailing honey at a price below what most buyers would pay for the honey in earlots. In another state a producer is peddling fine comb honey at 20c a section. Join your local association and help educate all local producers so that there need be no such menace to the industry at large.

Remember that selling expense is a legitimate part of the cost, and that it costs to sell just as it costs to produce. The smaller the quantity sold, the higher the selling price should be. Boost the per capita consumption of honey by creating a new consumer demand. Sell honey by the roadside. Talk honey at schools. Demonstrate honey in stores. Join your local association and do all in your power to make it a live association. Preach the value of honey as a food in season and out of season and practice what you preach.



Vermont field meeting, West Pawlet, Aug. 12. A member of a live association will not retail honey at a wholesale price.

CERTAIN considerations that always enter into all marketing plans are difficult to apply to the marketing of honey. Yet they must be well understood before we can hope to solve our problems.

One of these is the proper package in which honey is to be packed, especially if it is contemplated to have the co-operation of the retailer in its distribution. This involves standardization of package and limiting the number of sizes and kinds. For retail distribution a standardization of retail price is also essential. With many men of many minds producing honey and not agreeing among themselves as to the cost of production, and many not even knowing what it costs to produce a pound of honey, this is an extremely difficult problem.

The unit quantity of comb honey has been pretty well determined by the universal use of the one-pound section, but the unit price at which it should be sold to the consumer has never been sufficiently standardized. In extracted honey both considerations are still unsettled, and, therefore, the problem is much farther from solution.

Another consideration to be taken into account is the proper appearance of the product when offered for sale. Too much honey is offered in unattractive, often repulsive and at least poorly labeled condition. This tends to lower the chances of any honey being looked upon with favor by the consuming public. Each beekeeper is a law unto himself in the size and style of package and often pays no regard to the vital matter of appearance.

Next comes the need for proper publicity back of the package, and this includes a policy of co-operation with the dealer. We see many commodities sold under attractive brands and standards because of such publicity. The sale of honey has miserably failed in this consideration, and such failure has been the most serious drawback to our success as merchants of our product. Almost every district in every state produces some honey, and usually no more individuality of price, size and appearance has entered into its sale than in the sale of such products as eggs or garden produce. Here and there some nationally or locally advertised and properly packed and standardized brand is offered, but the earnest efforts of the packer are soon set at naught by the senseless and foolish competition of the local producer, who floods the market with a nondescript offering at ruinous prices which are arrived at without regard to cost of production or expense incident to packing and marketing.

What Is the Best Method of Distribution?

The final main consideration is the proper

THE MARKETING PROBLEM

Importance of Uniform Packages, Proper Publicity and Well-selected Channels of Distribution

By E. G. Le Sturgeon

Manager Texas Honey Producers' Association

method of distribution to the retailer. A correct solution of this will depend upon a greater measure of co-operation than has been heretofore shown by

beekeepers, since concerted action and the collecting and dissemination of information concerning trade conditions and tendencies are necessary.

In my opinion the laborer is worthy of his hire, and the jobber or retailer, who takes the risk of sale of the products he carries in stock, is entitled to his reasonable profit. It is manifestly unfair to the retailer of honey for the producer to continue, as so many beekeepers do, to sell to the consumer in his neighborhood at the same price at which he sells to the grocer. In the same way it is unfair for the producer to sell to the retailer at the same price at which he sells by wholesale to the jobber. The retailer is the customer of the jobber, whose reasonable profit should be protected. The consumer is the customer of the retailer, and the profit of the retailer should be protected. In other words, a beekeeper should recognize and quote three different prices, if he sells to these three groups or links in the chain of distribution. If he does not sell to the wholesaler or retailer, but confines his sale to the consumers only, he should remember that he is himself doing the work of these important factors, and should add to his price enough to repay him for his effort in packing, labeling and selling. This should be enough to cover a reasonable profit and the cost of doing the business of those who are handling honey in this territory.

The "Spread" Between Producer Price and Consumer Price.

I will not attempt to say what the "spread" shall be between the cost of producing a ten-pound pail of honey and the sale price to a consumer. Many factors that are determined by local conditions and trade customs enter in. The problem can be approached only in a general way, and the suggestions made here are general.

Let us say that it costs 10 cents per pound to produce our extracted honey. This is a bulk price at which we could sell our honey, without containers, in earload lots to a bottler, and just come out even on our year's operation of the apiary. The labor, label and container will cost us, say 2½ cents. Our price to the jobber or wholesaler in resale quantities should therefore be 12½ cents per pound or \$1.25 for each ten-pound can. The jobber's profit usually ranges from 10 to 12½ per cent of the selling, or list price, to the retailer. This would make the normal price to the retailer of such honey about \$1.40 per can or \$8.40 per case of six cans. The profit of the retailer

is usually 20 to 25 per cent of the price to the consumer, and the retail price on this honey would probably be \$1.75 per pail. Let us see how this looks:

Cost of producing 10 pounds of honey..	\$1.00
Cost of packing, label and container..	.25
Cost of jobber or wholesaler.....	.15
Cost of retailer.....	.35

Cost to consumer.....\$1.75

Do not get the idea that the jobber makes 15 cents on every can of honey he sells. His profit is really infinitesimally small on each individual can. Out of the 15 cents he must pay drayage, rent, office expense, salesmen's salaries and a dozen other costs. His ability to do business at all rests wholly upon volume. Neither does the retailer make 35 cents on every can. His costs are proportionally heavier because his sales volume is smaller and in addition he has greater risks of all kinds.

Let us consider, for a moment, honey packed in glass and in smaller containers than the ten-pound pail discussed above. As the container becomes smaller and more expensive, the "spread" becomes automatically greater because new factors of cost enter in. Labor is proportionally greater, the container is enormously more expensive, and the costs of sales mount. It costs the retailer practically as much to make a sale of a one-pound jar as it does to sell a 10-pound can because his sales are all unit sales anyway. In fact, we sometimes find that the 10-cent honey we have been considering has to be sold as high as 40 cents per pound in certain expensively labeled and attractively packed pound jars, especially if freight and transportation charges enter in, and this without anyone making an undue or excess profit on any of the transactions. All these matters should be given thought and study by the producer who sells his own product.

When the Producer Becomes a Merchant.

The business of producing is one thing; the business of marketing is another. When the producer becomes a merchant and sells his own product he should have, and should insist upon having, the wages of a merchant. This is common sense. Besides that, it is vital, if he is to establish a permanent and standardized market, that he recognize these facts and respect these profits. If he persists in selling direct to retailers at the same price the jobber pays, the effect will inevitably be that the jobber will no longer handle honey and the general distribution system will break down. If he persists in selling to the consumer at the price paid by the retailer, the latter will justly refuse to handle honey, and the means of distribution will in time become limited to the range of the peddling wagon of the foolish producer who has killed the goose that laid his golden eggs. The merchant is the best friend of the producer of any commodity. It is the merchant and the established trade channels that make economical

distribution possible. Honey has never been over-produced; it has merely been under-distributed. The honey producer has been in great measure at fault for this, because, by direct sales in small quantities at ruinously competitive prices, he has discouraged the merchant from handling it.

Summary.

Let us resume for a moment some of our main considerations:

1. Standardization of retail package as to kind and style. This has been done automatically with comb honey, but is still a problem in the marketing of extracted and bulk comb honey.

2. Standardization of retail price. This has been impossible up to now because of the wide areas in which honey is produced and the lack of co-operation among beekeepers. Also, there has been a lack of the true knowledge of market and crop conditions.

3. Proper appearance of the package from the standpoint of attraction to the buyers. With many men of divers habits and minds packing the product individually, this has been a difficult problem.

4. Proper publicity back of the package, including general co-operation with the dealer. If this is ever done it must be done by some such concerted movement as the American Honey Producers' League.

5. The proper channels of distribution should be recognized and protected. To get honey before all buyers, it must be handled as a staple commodity and this brings us to—

6. The proper prices at which honey must be sold to jobber, retailer and consumer. The beekeeper who becomes a merchant must take into account his costs as a merchant and demand his wages for the service he renders. In doing so he will encourage the handling of honey by the regular trade channels and greatly widen his field of distribution.

The remedy is threefold: Co-operation, education, publicity.

Here and there are springing up groups of beekeepers who are organizing co-operative marketing associations that are rapidly solving, in their limited trade areas, some of these problems. Grade standards and package standards are being evolved, and more respect is being shown to the conventional channels of distribution. By their example and their persistent efforts to educate their neighbors much good is coming. The individual beekeeper, here and there, who is not in touch with these movements, must slowly become educated along these lines, and when really cognizant of the true conditions he will also become a co-operator.

For complete success ever to come, this education of the isolated individual is necessary. One beekeeper who produces 500 to 5,000 pounds of honey can absolutely demoralize the market of a whole group of beekeepers who produce 100,000 pounds.

Let one man persistently cut the price and disregard trade channels, and the whole distribution system tumbles in his locality.

Publicity must come by a conscious and concerted action of the whole. By publicity, I mean the dissemination of knowledge of the true value of honey as food and the creation of a desire on the part of the consumer to purchase it. Such publicity can

come about only through joint action, and my threefold remedy thus resolves itself to the one idea of co-operation. If beekeepers learn the fundamental principles of marketing and distribution, aid in giving publicity to our product, and co-operate with our various sales agencies, our problem is solved.

San Antonio, Texas.



ONE may have his shipping cases factory-made, or ever so perfect, and yet have his fine comb honey shipped in them broken down. As a rule it is not advisable to send such a product by express, although it can be done. The experience of the writer has shown that comb honey sent by freight not only goes through at a less cost, but in much better condition. Much will depend on whether comb honey is sent in carlots or in less than carlot shipments.

How to Ship Small Lots of Comb Honey.

As a rule a single case of comb honey or half a dozen or a dozen of them can not be sent without being put into a special carrier or crate. No matter how modern the cases may be, with plenty of corrugated paper for top, bottom, sides and ends, if they are sent uncrated, either by freight or express, there is almost sure to be a breakage and leakage of the comb honey. Where a customer wants a single case, or a couple of them, they should be put in a box large enough so that they can be well packed all around in straw. Comb honey is seldom shipped in less than four to eight cases at a time, making an aggregate weight of not less than 100 pounds. The carrier or crates that are ordinarily used will take eight cases, or the equivalent weight of 200 pounds.

The carrier here shown is lined on the inside with paper to conform to the rulings of the railroad companies. On the bottom is then placed six or eight inches of loose straw evenly distributed, when the cases are piled in, one on top of the other, until the carrier is level full, four single-tier cases deep, of 24 pounds each, and two cases long. The paper is then neatly folded over, after which the cover boards are nailed in place as shown in the cut.

The carrier is so big and heavy that it can not be picked up by the freight-handlers and dumped or thrown. The handles sticking out suggest the method for moving it, and that means two men, to pick it up and carry it wheelbarrow fashion. Two can easily pick it up and move it from truck to car, and from car to truck, and from truck to

SHIPPING COMB HONEY

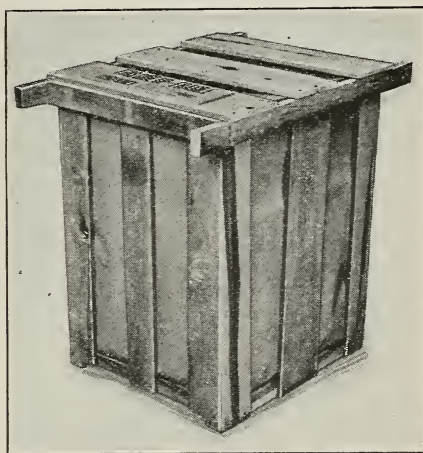
How to Pack Small Lots as Well as Car Load Lots to Prevent Breakage

By E. R. Root

destination with perfect ease. Such a carrier will go either by freight or express — preferably by freight without breakage or leakage. If 500 or several

thousand pounds of comb honey are to be shipped, carriers like those here shown should be used. While they entail some additional expense they insure safe delivery of the honey, save loss from breakage and leakage, and leave a pleased customer at the other end of the route.

In many instances the beekeeper can and should carry his own comb honey with his



This carrier practically insures safe delivery of comb honey. It has a cushion of straw at the bottom and is lined with heavy paper to keep the cases clean.

own truck to his near-by towns and cities. On bad roads, in a common wagon with no springs, plenty of straw should be put in before loading the honey; but usually an automobile truck is provided with springs, which, in connection with pneumatic tires and careful driving, will insure safe delivery without any carriers or crates or straw in the bottom.

It sometimes happens that all the local

markets in the towns near by, as well as the cities, are more than supplied with comb honey, so that the honey must be sent to a distant market, too far away to deliver by truck. In that case, less than carload shipments should be sent in carriers.

How to Ship Comb Honey in Carlots.

When sending honey in carlots the carriers are not needed. The railroad companies should furnish a strong serviceable car that will stand rough usage—one that has not been used for carrying phosphate, wool or live stock. A wagonload of straw should be provided in advance. The floor should be swept out when the car is ready. The cases of comb honey should be neatly piled in the car one on top of the other, and of even height, like cord wood, until the whole car is filled within a foot or 18 inches of each end. It is not advisable to pile the honey up higher than about eight cases single tier, or four cases double tier. It is important that the cases be piled snugly against each other, in such a way that the combs will be parallel with the track beneath.

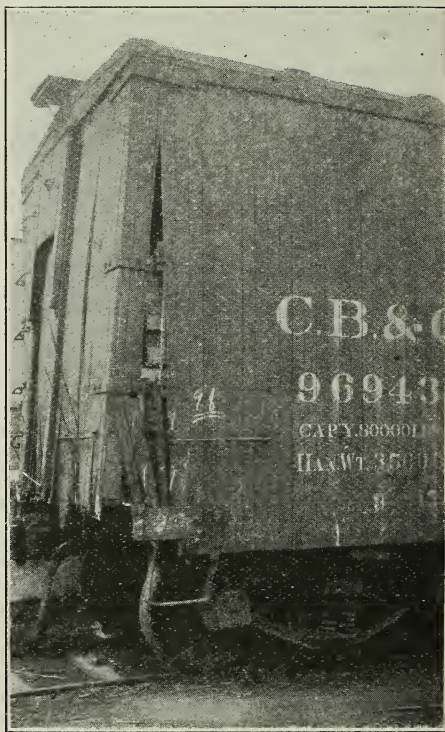
Any intervening space left on the sides next to the car should be filled in with crating, boards, or straw tightly wedged in. There is not a great deal of side movement in a car; but it is important to provide for a slight amount of it. The intervening space of 18 inches at each end of the car should be filled in with closely packed straw. This can not be packed in too snugly. The purpose of the straw is to provide against serious end shocks due to stopping or starting of the train. It sometimes happens that a car of comb honey is shot ahead on a switch; and unless a man is on top of the car at the brake the car may be jammed into another one. It is, therefore, important to see that the end spaces at the end of the cases in the car are cushioned with tightly packed straw. To keep the straw from working up at each end, thus allowing end shock between the cases, boards should be put over the top of the straw and held down by cleats on each side of the car.

Should there not be quite enough comb honey to fill the car it would be well to leave the space next to the doors, and fill in with very rigid bracing made up of 2 by 4's fastened in such a way that they can not possibly work loose.

Many and many a car of comb honey sent long distances has had a heavy breakage, caused by carelessness on the part of the shipper or by his inexcusable ignorance in not seeing to it that the comb honey was packed solid and properly cushioned at the ends and sides of the car. The shipper should make up his mind that his comb honey is more fragile than eggs in egg-carriers: that it is relatively heavy; that the railroad companies en route will give his honey the heaviest end-banging it has ever had. He must play safe. While he may recover damages from the railroad company,

the process for doing this is exceedingly long and difficult, with the possible and probable result that the railroad company will get out of paying for the damage, or it may pay a merely nominal sum.

Perhaps in all beedom there is nothing more aggravating than a car of broken-down comb honey. If it is sent against a draft attached to the bill of lading, the consignee is likely to refuse payment. It lies on the tracks while telegrams are flying back and forth; and, even though a compromise be effected, no one is satisfied. In the mean time robber bees get busy, and sting the railroad men who are trying to "clean up." This is not all. Foul brood may be scattered far and wide. So, be careful, Mr. Beekeeper.



This is what may happen if the ends of the car are not cushioned with straw. The car received a hard bump and the honey pushed out the end of the car.

The subjoined illustration shows what happens in a good many cases when proper provision is not made for the end shocks that must inevitably occur when the train stops or starts. When comb honey, heavy as it is, is jostled about in the car, say the space of a foot or more between the cases, and the cases slide this way and that, the inevitable result is a breakdown. Possibly the whole end of the car may be shoved out as shown in the cut.

FOR several months notices have

appeared in the bee journals asking beekeepers to contribute to the endowment of a library of beekeeping literature in honor of a man who is beloved by beekeepers throughout the world, the late Dr. C. C. Miller. Hundreds of contributions have been received and acknowledged, and considerable interest has been shown in this movement. The contributors have been induced to send in money primarily from the fact that it is a pleasure to all of us to acknowledge in this way our debt of gratitude to Doctor Miller.

I should like to point out the great good which the proposed library may do for the advancement of beekeeping in this and other countries, and in this way to show the value of the movement. There are published in the various countries of the civilized world a large number of journals devoted solely to beekeeping. The Bureau of Entomology receives a few of the more important ones from foreign countries, and various college and university libraries subscribe to some. A small number of individual beekeepers are subscribers to a few of them. Yet the fact remains that there are probably bee journals of which not a single copy comes to the United States, or if they do come they are not kept and are not available for general use. We can not ignore the fact that from time to time all these journals contain articles of great interest and value, and it is a pity that there is not some repository in this country in which all these journals may be permanently filed ready for use. This the Miller Library can do with a little effort. If the library were confined solely to the obtaining of bee journals of the world, it would be one of the finest additions to beekeeping facilities that one could imagine, and would constitute a worthy monument to the man whom we wish to honor.

Since the invention of printing, innumerable books have been published on bees and beekeeping, how many no one knows, but it runs into the hundreds and thousands. A few libraries contain a considerable number of the older books, especially those which at the time of publication were printed in large numbers. Some college libraries have started collections of this kind, and there are a number of individuals who, through their interest in bees, have collected such books. There is today no place in the country where the beekeeping books are collected to a degree which is adequate, and here again the Miller Library should be able to surpass any previous effort in this line.

I can hear some practical, hard-headed individual speak up and ask what good it will do to have all this old stuff gathered together. We have, it is true, good practical

THE MILLER MEMORIAL

*How it Can be Made the Finest
and Best Beekeeping Library in the
World*

By E. F. Phillips

books on beekeeping which are quite satisfactory as guides for apary work, and we have books which go into the more scientific aspects of the subject.

Yet one can scarcely read any of these older books without getting something good from them which is not contained in the recent books. Furthermore, to understand our present status in beekeeping we ought to know the history of the art, and we do not get that by reading only the modern books and journals. For those who are engaged in work for the advancement of beekeeping, familiarity with the old literature is necessary to prevent blunders. Neither will it do for us to wrap ourselves in a mantle of satisfaction and decide that American books are good enough for us, totally ignoring the excellent work which has been done in other countries. Any one with the proper enthusiasm for bees will want to know all that he can about the bees and about the progress of the industry in other countries.

I want to see the Miller Library the finest and best library on beekeeping in the world, and I can see no reason why in a few years it may not outstrip every other library. I am eager for this because of the interest and value of such a library, and, because of a desire to see the memory of our great beekeeper perpetuated through the generosity of his friends. As a member of the committee which has had the raising of funds in hand, I deeply appreciate the words that have come in the letters which I have received with contributions to this fund. They all breathe a spirit of love for Doctor Miller, and it is a joy to get such letters. They are far more valuable than the contributions contained in them as an indication of the admiration which beekeepers have for Doctor Miller. Yet, if I may do so without seeming ungracious, I think I should add that we have not done half enough for this memorial. When we consider the value of such a library to the advancement of beekeeping, and especially when we weigh the value of the life and work of Doctor Miller to each of us, we ought to dig down deeper and make this library an outstanding monument.

It is not too late for contributions to this fund; in fact, it will never be too late. Since the fund will be invested and only the interest used for the purchase of books and journals, the fund will be a perpetual one to which additions can be made at any time. A contribution of twenty dollars will yield an annual income of at least one dollar, which in turn will make it possible to add one more bee journal to the list of those filed in this library. I believe that there are a number of individual beekeepers who would like to make such an addition to the

library. A number of the associations have contributed liberally, but there are others which will not want to be lacking in an expression of appreciation of the worth of Doctor Miller and which will want to add their part to this great library.

The committee having this matter in charge has decided to locate the Miller Memorial Beekeeping Library at the University of Wisconsin, where it will receive sympathetic care and support. I should like to see this fund turned over to this institution with a larger amount than is at present at hand, and then I should like to see beekeepers look on this library as something to receive their constant interest and support, to which they will make contributions of money, books or journals, at any time when it is possible.

Several beekeepers of my acquaintance

have some fine old books on bees, and I have some myself that I prize highly. When I get through with these books I can think of no better place to put them than a library of this kind. All of us who have taken the trouble to collect these books would rather have them kept where they will do good than to have them scattered and lost, and I suggest that we all put provisions in our wills to have our bee books sent to the Miller Library. I think it is not too much to expect that, as the years go by, the Miller Beekeeping Library will become one of the landmarks in American beekeeping, and I want to do all I can to make it great and valuable. There is no way that I can think of which will better express our appreciation of the life and works of the man in whose honor this is being established.

Washington, D. C.



HONEY production today must concern itself with American foul brood. This brood disturbance is going to follow the hive bee wherever

beekeeping is practiced in the state. There is no absolute preventive for the disease, and every good beekeeper must know its symptoms and know how to keep it under control. When American foul brood has reached an advanced stage there is no excuse for not being able to recognize it. Our chief diagnostic trouble is during the time when American foul brood first enters a colony that already has been affected by European foul brood. The symptoms of American foul brood and sacbrood are quite constant, but the reverse is only too true in European foul brood. Ever so much time and trouble are saved in treating brood diseases after an exhaustive study of their symptoms has been made. Mr. Sturtevant has given us the latest regarding symptoms of the various brood diseases in the current May issue of this publication. It will be well for many of us to re-read this article.

General Considerations.

In control work we must ever bear in mind that, no matter how severe our preventive or combative measures may be, we are liable nevertheless to have the disease reappear at any time. We are able to keep it under control very nicely, and in our work we have in mind rather the "dollars and cents" standpoint than the possibility of complete eradication of the disease. For instance, we do not destroy partly drawn-out foundation taken from an infected colony although such a procedure may result in a two or three per cent infection of colonies to which the foundation was given. We

CONTROLLING FOUL BROOD

Practical Methods of Keeping Down Infection in the Yards

By M. C. Richter

be guided by common sense and make our control work practical.

Sources of Infection.

We know that the source of infection is carried in the honey, and that the common carrier of this infected material without the hive is the robber bee. Any hive material that may be contaminated by honey from an infected colony and the brood-combs that contain the dried scales of American foul brood are likewise carriers of the disease. The beekeepers' paraphernalia also may be a source of infection.

There is yet another and important source of infection. It is the flight bee as distinguished from the robber. This matter will be discussed later.

How Spread.

The disease spreads within the colony by means of the nurse bees using infected honey when feeding the larvae. During honey flows the nurse bees use incoming nectar for this purpose, and under such conditions the disease makes little if any headway. It is during a dearth of honey, in poor years and more especially when stores are lowest in the colony, that the disease not only thrives but spreads rapidly. When an apiary has once been subjected to a source of infection any colony in the yard may harbor the infected material for several years before any diseased larvae appear. A single worker in but one trip may carry the spores, and several years later a single cell of honey may be uncapped by the bees during a lean year and fed innocent-

feel that it is cheaper to shake two or three colonies in every hundred than it is to destroy a given number of frames of foundation. In other words, we must

ly to healthy larvae. Entire apiaries, if permitted to pursue nature's course, will be destroyed after this fashion. And how is a beekeeper to know how and when his bees received the infection? Perhaps some picnickers lunched on bottled honey from some infected apiary, or more likely some wild (?) bees in a tree succumbed to the ravages of American foul brood.

How Controlled.

Under normal conditions we inspect the brood of our colonies from three to five times. Usually we make the examination twice in the spring, and again twice during the fall after the crop is off.

When a case of American foul brood is discovered, no matter at what season of the year, the infected colony is never shaken when found, but merely marked. As soon as a cell of American foul brood is discovered, the colony is left as it was before manipulation. There may be other infected colonies before the entire yard is examined, and, if so, these in turn are likewise marked. All infected colonies will be treated at the same time.

Having treated several thousand colonies affected with American foul brood, either as inspector of apiaries or as a purchaser of diseased apiaries, the writer wishes to state that a thousand or more colonies may be handled year after year with an infection not exceeding three to five per cent. A percentage of outbreaks as low as this does not hamper honey production. It must also be remembered that about 75% of the colonies that contract the disease do so in the spring of the year; that is to say, it is in the spring of the year when we detect the trouble. Colonies at this time after treatment differ in no wise from swarms in respect to the amount of surplus honey that they gather. In fact, cases of American foul brood that are treated in March produce considerably more honey than do April and May swarms when the honey flow comes in June.

So that not more than five per cent of our colonies contract American foul brood, it is necessary to adhere strictly to the three following statements:

1. Shake all cases within a day or two after detection.

2. Shake at the original location of the colony in the yard.

3. Shake only when there are no bees flying.

The above applies whether bees are shaken in spring, summer or fall. There are many other considerations in the control of this disease, but it is our belief that those mentioned above are the most important.

(1) No matter what the conditions of a colony may be, if it shows a cell of American foul brood it should be shaken without delay. Of course, if it takes two days to go through a yard, and but one case of American foul brood was found on the first day, we will wait until we have completed our work on the following day, before proceeding

to shake the lone colony. Naturally this would be the logical thing to do, for one or more diseased colonies may be found on the second day. The point to bear in mind is this: A source of infection has been found in the apiary, and we know that the sooner we rid ourselves of this infection the better. The colony is shaken forthwith, and no other treatment whatever is practiced, for in our minds it is of the utmost importance to get the infected material out of the yards and away from the bees. If left in the yard it is ever a source of danger. Cattle may overturn the infected colony, the wind may upset it or even a woodpecker might peck a bee-space in a hive-body.

(2) The infected colony must be shaken exactly where it stands in the yard, and should not be removed to a hospital or elsewhere. Such a procedure is costly, a loss of time and not necessary to protect the spread of American foul brood. The reason for this will be pointed out directly.

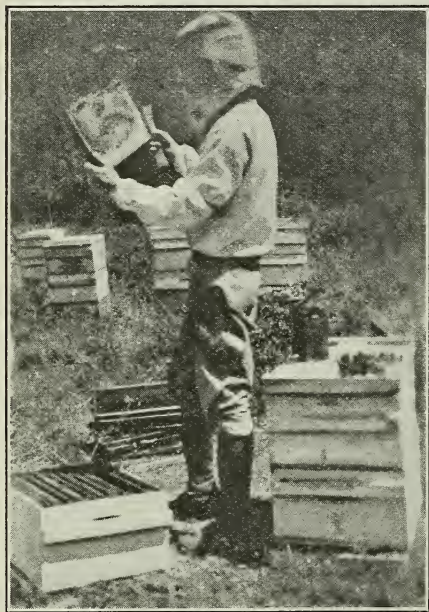
(3) Most beekeepers shake their diseased colonies when bees are flying. It is the writer's opinion that they are making a very sad mistake. No matter how expeditiously the shaking treatment may be carried on, flow or no flow, there is bound to result a certain amount of confusion. While the operator is in the act of shaking a diseased colony, some of the bees of the colony will alight on adjoining hives. They will alight not only on hives adjacent to their own in the same row, but also on the hives in the row directly in front of them. Furthermore, the bees will not alight necessarily at other hive entrances, but may rest on the top or on some other part of other hives. After the colony has been subjected to treatment many of these confused bees do not find their way into their clean home and consequently are liable to carry infected material into neighboring colonies. American foul brood has broken out in this manner too many times to cast any doubt on the above assertion.

The proper time to shake is when there are no bees flying. It should be done either in the early morning or evening or on cold cloudy days. If we shake at such times we have not only done away with confusion but with robbing as well. There is one other point to observe; the clean hive must, as far as is possible, resemble the old home. It must be placed in exactly the same position as the old home, and, if the old hive was two stories high, then the new abode must likewise be two stories high. In other words, we have brought about conditions so that when the bees are able to fly they will behave but very little differently from a newly hived swarm. It might be mentioned that, from an American foul brood standpoint, it is wise to space all colonies eight feet apart in the apiary.

How to Shake.

We prefer to treat the bees before day-break, for after treatment the little clusters about the hive are better able to adjust

themselves as the day approaches than would be the case during night. The cut shows a diseased colony having been pulled to one side, with the entrance pointing towards the old stand upon which sits the new hive. The diseased colony is drawn either to the right or left so that the approaching or waning light, as the case may be, falls on the combs while the operator looks for the queen. The new home has an excluder between the bottom-board and the brood-cham-



The diseased colony is moved aside and a clean hive placed on its stand. Each comb is then examined as taken out before shaking until the queen is found, for she is to be placed in the hive between the excluders to prevent absconding.

ber and another excluder between the brood-chamber and super. The brood-chamber contains always full sheets of foundation and if the colony be strong, the second hive-body likewise should contain foundation. Otherwise the two or three hive-bodies, as the case may be, are empty. (The size of the new home, it will be remembered, should conform to that of the old. The reason for having the upper excluder is to prevent the bees from clustering and building comb in the top hive-body.)

When the hives are in position the cover of the diseased one is placed flat upon the ground directly behind the operator. As the combs are lifted out they are examined for the queen, shaken in front of the new hive, provided that honey does not shake out (otherwise the bees are brushed off), and then piled on the removed cover, taking care that no honey runs upon the ground during the operation. As soon as the queen is found she is placed in the brood-chamber,

and then the brushing or shaking can proceed more rapidly. After the first hive-body is emptied it is likewise placed behind the operator, and, as the frames are taken from another hive-body, they are placed directly in the super just emptied. After the last hive-body is emptied of comb the bees are shaken from it and from the bottom-board. The bottom then is placed behind the operator away from the bees and the empty super upon it, into which are placed the first complement of combs that were removed from the diseased hive and which were laid temporarily upon the top. The excluder, bee-brush (always made from grass, etc., and never used a second time) and other hive-bodies go on next. Finally the top is placed on, taking care that the side upon which the frames rested is placed on the inside. The old hive is then made bee-tight and cleated so that it will withstand a trip on the machine to the pesthouse.

In the event that the queen was not found during the above treatment, she is looked for later on the underside of the excluder. When located the excluder is simply inverted. Often on treating colonies in the evening it becomes so dark that we merely shake and do not look for queens until the following morning. Should a diseased colony possess a virgin, the queen-excluder over the bottom is omitted. Occasionally we detect a case of American foul brood in a queenless colony and if such a colony be weak or badly affected, we take it to the pesthouse and destroy it. Otherwise, we may give it a chance to mate a queen before applying treatment.

When shaking late in the fall and during the absence of a flow, we employ precisely the same treatment and let the bees starve for about two days before we remove the foundation and give them capped honey. A few days after shaking during inclement weather in spring, we treat shaken colonies similarly to swarms by giving them Demuth feeders several days later. Throughout the entire process of treatment great care must be exercised not to spill any honey in the yard. About 10 days after shaking, the colonies are examined and the excluders removed.

How to Clean Infected Materials.

All infected hive parts from the yards go into a bee-tight pesthouse. A two-frame extractor handles what honey the combs might contain, and the frames then go into a steam vat where most of the wax is removed. After this treatment they are dipped in boiling lye water. For the past six years we have disinfected our frames, tops, bottoms, excluders and hive-bodies after this fashion. All hive parts are submerged in the boiling lye for at least one minute, and, as the solution weakens after two hours of use, a third of a can of lye is added (we start with two-thirds of a can in a Herschiser press), and the time of treatment is extended for about half a minute.

Big Sur, Calif.



FUTURE MARKET PROBLEM

Consumption of Honey Could be Increased Tenfold by Organized Effort

There are in my county approximately 125 beekeepers of whom 6 may be classed as honey producers, that is, those who have for sale any surplus worth mentioning. Probably this ratio will hold good throughout states east of the Mississippi River. If, by any means, the other 95 per cent can be transformed into actual producers, what will be the effect upon marketing conditions? Perhaps, owing to the inefficiency of the average individual or to lack of interest, it can't be done. But, in view of the fact that the present wholesale price of honey is below the cost of production and the trend of prices is downward, why continue propaganda for more beekeepers? The "criminal waste of nectar" which we read about has been due almost entirely to the fact that production in many localities has not been profitable. Thousands have tried it and failed. But with the enormous increase in acreage of alsike and sweet clover throughout the middle states, many localities, hitherto unproductive, will become productive of large quantities of honey. It is apparent that the supply in eastern states will soon exceed the demand, and our western brethren will not find it profitable to pay freight to eastern markets.

I believe that the only rational solution of the problem is for beemen to back an organization that will effectually increase the demand in every state for our product. Let us work, not for more beekeepers but for better beekeeping and more intelligent marketing. The American Honey Producers' League should receive the support of beemen everywhere in creating a local demand for honey through proper national advertising. There is no good reason why California honey should be shipped to New York, and Ohio and Indiana honey sent to Arizona and other far western states. Then there should be producers' organizations in every state, working in conjunction with the national league, to see that honey is advertised locally in every city and town and that every grocer is constantly supplied. Let's put extracted honey in 5-pound and 10-pound pails, and emphasize the fact that it is a food rather than a medicine. The consumption of honey in homeopathic doses should not be encouraged.

Judging from the results of several years of local advertising and the pushing of sales in larger packages, I am confident that ten times as much honey would be consumed if producers could hold together, properly organize and do business in a business way.

Valparaiso, Ind.

E. S. Miller.

AN ARGUMENT FOR HONEY

Deadly Germs Which Cause Intestinal Diseases in Man Cannot Live in Honey

W. G. Sackett, Ph.D., Bacteriologist of the Colorado Agricultural College, Fort Collins, Colo., has made some important experiments, the results of which were published by the station in bulletin No. 252.

Professor Sackett scientifically introduced the organisms known as the "typhoid-colon group" into pure honey, with the following results:

"*B. Typhosus* was no longer present in the pure honey after 24 hours." This is the germ which causes typhoid fever.

"*B. Paratyphosus* (A and B) were dead in pure honey after 24 hours." These germs cause diseases very similar to typhoid fever.

"*B. Fecalis Alkatiogenes* was killed in pure honey inside of five hours."

"*B. Proteus Vulgaris* died out in pure honey after four days."

"*B. Suipestifer*—the culture was dead in the pure honey on the fourth day." The presence of this germ is often "characterized by chronic broncho-pneumonia followed by Septicemia."

"*B. Lactis Aerogenes* died out in pure honey on the fourth day."

"*B. Coli Communis* died out in pure honey on the fifth day." The presence of this germ is said to become "pathogenic in the case of ulceration in typhoid fever. It may enter the blood causing peritonitis."

"*B. Dysenteriac*—ten hours' exposure in pure honey was sufficient to destroy this organism." As the name well indicates, this is the germ which causes dysentery.

"*B. Enteritidis* was dead in pure honey in 48 hours."

The remarkable thing about this investigation is that, while honey is consumed in a raw condition, it is not only not a "carrier" of these deadly germs except for a few days at most, but that it absolutely destroys them within a short time if they are introduced into the honey in any way. When we eat honey we may be assured that we are not exposing ourselves to infection. When we consider that many of the death-dealing bacteria mentioned above are readily carried into the human system by water, meat, vegetables and milk, we are inclined to look upon honey as being in a class by itself, so far as "safety" is concerned.

Professor Sackett well says in his summary, "The longevity of the typhoid-colon group in honey is very limited. The probability of honey acting as a carrier of typhoid fever, dysentery and various diarrhoeal affections is very slight."

Many of our most scientific physicians and best-regulated sanitariums have long

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persisted in prescribing honey and in recommending its use freely by those who are well in order to keep well and by those who are sick in order to get well. Perhaps these wise men have long known the germ-destroying power of honey. Who knows but that the wise Solomon knew a few things when he advised his people to "Eat thou honey because it is good."—Prov. xxiv:13.

A "wise one" of much experience said, "If you have any sort of kidney trouble, cut out all forms of sweets except honey, and see what will happen."

Madison, Wis.

H. L. McMurry.

A PLUCKY WOMAN BEEKEEPER

A Representative from South Africa Visits the Home of the Honeybees

About a year ago we received a letter from Miss Ada E. Pullinger, Grabauw, Elgin, Cape Province, South Africa, one of the leading beekeepers of the Union of South



Miss Ada E. Pullinger of South Africa at the Home of the Honeybees.

Africa, asking if it would be possible to receive her as a student in bee culture at our Medina apiary. She said that she would be willing to take hold of the work if we would give her the opportunity. There was something about her letter that indicated not only real love and enthusiasm for the bees, but that she was a person of superior intelligence. As a general thing we do not take students in our apiaries; but I told our people that here was a person to whom we could make an exception to our general rule. A cordial invitation was extended; and in due time, after some six weeks of

travel by boat and train, she arrived at Medina from her far-off home.

When she first came I started to give her instructions in the rudiments of bee culture, thinking she was, perhaps, a beginner. But it did not take me long to discover that she knew as much about bees as I did. All she wanted of us was to see and learn how we handle bees in America, particularly at the Home of the Honeybees. She proved to be an apt student, winning the admiration and respect of all who came in contact with her.

She could take a severe stinging better than any other woman I ever saw. She was absolutely fearless. She took hold of hard work, and even brought down a swarm from the top of a ladder. She did more than her share of the work.

She not only carries on beekeeping operations on a large way in South Africa, but she is quite an extensive poultry-raiser. She has carried off first prizes, not only on bees and honey, but on fancy poultry, at South African shows.

She spent several weeks with us, and then took a trip to Washington to make a visit to Dr. Phillips, of the Bureau of Entomology. She went back to her home with the best wishes of all those whom she met. Gleanings hopes it may have the privilege of hearing from her from time to time.

Medina, Ohio.

E. R. Root.

FERMENTATION IN HONEY

How this Trouble Can be Avoided by Proper Ripening and Heating

Fermenting honey on the hives or elsewhere is rare hereabouts, regardless of when it is extracted. In one instance within my recollection, a producer extracted every six days, tanked it in the house, and there was some fermentation, which was remedied when the tank was placed out-of-doors in the sunshine. In my own locations, there is seldom a very heavy flow; so we prefer to tier up, and if we get a little behind with our work, sometimes it is practically all capped. However, it is a fact that with this tiering up, in an arid climate, there may not be so much capped honey as when not tiered so high, though the honey will be ripened better. By tiering up in this way the bees are ready for a heavy flow, such as sometimes comes for a few days; while on such occasions, the man with a scanty supply of supers on the hives may lose heavily from lack of storage room.

In the Salt River Valley of Arizona, under some conditions, the ripening honey in the hives will ferment and even run out of the entrance, after which work by that colony ceases, unless the sour honey is extracted. This honey is heated after ex-

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tracting, and is then of fair quality. Some say that, if a small field of alfalfa in bloom is irrigated and then stock turned in to graze, a sour smell can be noticed as one drives by, and at such times particularly, the sour nectar is gathered.

This season I shall run the honey over an evaporator containing hot water, steam-heated, with perhaps a few steam pipes just above, to dry the air. To stop fermentation? No. But to enable me to begin extracting sooner and probably thereby controlling swarming better during our first flow, and at the same time, continue to produce a superior article. When our second honey flow arrives I will no doubt have a considerably greater number of empty supers ready to handle a heavy flow, if such a flow should materialize, than would be the case if I waited to hive-ripen every pound of honey gathered during the first honey flow.

Where souring is common, such a pan would be a profitable investment. I pump the honey up several feet into a clarifying tank, where it separates on the gravity principle, most of the wax, etc., floating on top and remaining there until skimmed at the close of the day's work, and a pipe carries the honey to the tanks where it further settles and clarifies until ready for canning. The bottom of the extractor is also double and heated a little with steam, so the honey is very readily pumped; in fact, with this warm honey, I feel sure that one of the small pumps will handle the honey from several extractors.

During part of 1920, we ran two eight-frame extractors, side by side, the honey from both discharging into a small pump tank between the two. One extractor had no heat applied, the honey from the cold extractor blending and mixing with the warm honey from the machine with the double bottom. One $\frac{3}{4}$ -inch pump often handled three tons per day, and could handle far more, and does it with no great amount of power. A single heavy duty two horsepower electric motor furnished ample power to run the extractors and the pump; there is some advantage in the arrangement, as one extractor acts like a fly wheel and aids in starting the other, both never being started at the same time.

Meridian, Idaho.

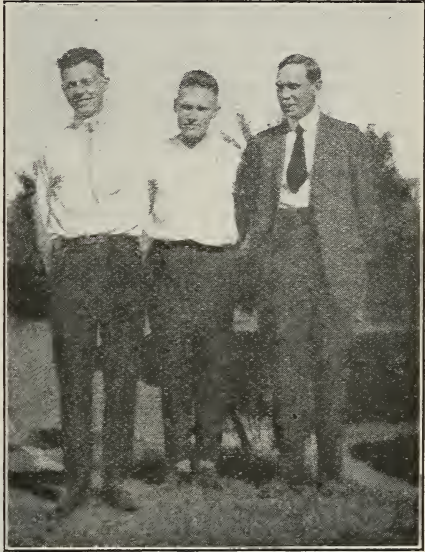
E. F. Atwater.

which we sold and sent the boy to Hanover College, paying his expenses and \$40 over.

The following spring we had 24 colonies, which gathered about a ton of comb honey, and this, with the \$40 from the previous year, paid the boy's way the second year.

The boy taught in the high school in the college building the next year, and the money from the bees purchased a Ford car.

For four years in succession the bees from 23, 24, 35 and 41 hives gathered a



D. F. Rankin and his sons. These two boys are paying their way through college from the profits from the bees.

ton of honey, which paid more than his expenses for four years at college.

He and his younger brother, who is now a junior in Hanover College, have now a love for the blessed bees and know how to manage them profitably.

The older boy came home from college at week ends last spring and managed the bees so that not one of the 40 colonies swarmed. On June 10 the second boy came home and reared queens in artificial cells and requeened most of the colonies. Our increase was 25 colonies, and the crop about a ton of honey.

D. F. Rankin.

Hanover, Mass.

PAY WAY THROUGH COLLEGE

How Two Boys Earned Enough to go to College from One Small Apiary

Six years ago my older son graduated from high school and had a great desire to go to college. We had 23 colonies in the back yard. They gathered a ton of honey,

[The new president of the Pennsylvania State College is another good example of the boy who earned his way through college by producing honey. He was a native of Essex County, N. Y., living on the west side of Lake Champlain, almost opposite the home of J. E. Crane, with whom he often consulted as a boy.—Editor.]

FROM THE FIELD OF EXPERIENCE

SELLING IN THE HOME MARKET

Folly of Asking 80 to 120 per cent Above Wholesale Price When Selling Locally

If I buy a couple of tons of hay in the home market of my neighbor within hauling distance, I expect him to sell it within 10% of his price for a whole stack. So do you. If he sells me a whole hog, I get it for about the same money the butcher would pay. We deal direct, for cash, at bulk prices. No lost motion, no transportation charges and no risk. What is wrong about that? And if the butcher takes half a dozen hogs the same day we load out a carload for Kansas City, he pays no more.

But if we honey producers sell 5 and 10 pound pails of honey to local retailers, many of us ask them 80% to 120% above the wholesale price. (See Gleanings, May, 1922, p. 281.) I take it the wholesale price of extracted honey is for honey in 5-gallon cans, two to the case, f. o. b. local railroad station.

It certainly does not cost more than two cents a pound extra in 5-pound pails uncased. I believe, if we ask local dealers more than about three cents per pound over the wholesale price, we are stupid business men.

If the wholesale price for extracted honey

is 10 cents per pound, this nets 8 cents for the honey alone. Small containers, two and a half pounds and up, cost from three cents a pound down. Eight and three are 11. I have no respect for the mental quality of those who quote wholesale the price as 10 cents and charge local dealers more than 60 to 65 cents for 5-pound pails. I sell at 60. The dealers can sell at 75 and make 25 per cent. I can sell at the same price at home.

And if any think the local store price to customers should equal that of honey sold first by the carload, hauled a couple of thousand miles, rehandled and repacked and finally shipped back by local freight, I think that such belong in Bedlam.

Laplata, N. M. Harrison H. Brown.

[The quotations on large lots by producers, on our market page, to which Mr. Brown refers, are understood to mean the price when the entire crop is sold in one lot or in carload lots, and not the wholesale price. The beekeeper in splitting up his crop to sell to local dealers should charge more than when his entire crop is sold in one lot, to cover the extra cost of selling in this way. When all the selling costs are counted, a case of two 60-lb. cans would have to be sold for two or three cents per pound more than the carload lot price in order to break even. —Editor.]



If every honey producer would employ two boys like these to sell honey in the local market, the honey crop of the country would be sold in short order. The boys are selling and delivering for Mrs. J. L. Irwin, Montpelier, Indiana.

REFERENCE

is made in an editorial in August Gleanings to marking the net weight on sections of comb honey. Laws making this necessary

are quite recent, and it is not surprising that beekeepers do not fully understand either the law or the necessity of complying with it. At first it seemed quite an unnecessary hardship or at least an unnecessary burden laid on beekeepers; but, after weighing our sections for a few seasons, I confess I like it, as it enables us to have all the sections in each case of even weight. So burdensome to many beekeepers did the law at first seem, requiring the weight of sections to be stamped or printed on the section or carton that covered it, that they had printed on cartons, "Not less than ten ounces," and then proceeded to pack without weighing, throwing out only the lightest. But it is not so hard a task as might at first seem. An active man can weigh out from 5,000 to 6,000 sections in a day and place each weight by itself. It can be packed uniform weights in each case, and dealer and consumer know just what they are buying.

* * *

If 12, 13, 14 and 15 ounce sections are all labeled "Not less than 12 ounces" they would doubtless all be sold for the same price, and whoever buys the light weights would have to pay some 25 per cent more for his honey than the buyer who drew a 15-ounce section. Is this right? It must be a great satisfaction to any honest retail dealer to know that every comb he sells is full weight and every one who buys will be treated equally well.

* * *

One of the charms of a journal devoted to the interests of beekeepers is to learn how other beekeepers manage their bees, what their pasturage is and how the bees behave under different conditions. M. A. Gill tells on page 515 that "swarming ceases when the main honey flow begins"—exactly the opposite of our experience here in the East. This year young queens will in many cases quickly fill all space available with brood and prepare again to swarm. The abundant flow has seemed to make them swarm-crazy.

* * *

On page 527 Ira D. Bartlett informs us that, when supers have been piled high at this season, with cool damp nights, fermentation is liable to start "if not removed to the honey-house; and even there they must not remain long, but should be extracted and sealed in tin cans or other tight containers within a short time." I can not help wondering if such honey will weigh 12 pounds to the gallon, or if extracting and placing in tight containers will altogether prevent fermentation. Mr. Bartlett is quite

SIFTINGS

J. E. Crane

too good a beekeeper to recommend putting up any but first-class honey, yet we have bought quite too many tin cans of honey that had fermented enough

to injure the flavor, to make us shy of anything that contained any unripe honey.

* * *

E. F. Atwater gives a novel way, on page 519, of taking honey, by going as soon as it is light in the morning and removing filled combs and returning empty supers and so preventing robbing, a very good way no doubt. But a man living less than a thousand miles from here can go him one better or worse, for he went even before it was light to one of our outyards and removed 20 or 25 supers and did not stop to shake off the bees. One hundred dollars has been offered for information that will lead to his apprehension and conviction.

* * *

In M. A. Gill's article on pages 515 and 516, he makes one or two statements worth our attention. For one thing he advises stripping off supers before the close of the season. The leaving of supers on until the honey flow is over and then leaving the brood-chamber full of brood and little honey will almost surely injure the colony for the next year, and account for many failures. What he says of wintering on two stories corresponds very closely with our experience.

* * *

E. M. Cole, on page 519, says he is able to save combs not in use from wax moths, by the assistance of spiders. I have tried it but have not been so successful, perhaps for lack of a sufficient number of spiders. It is worth testing out. I find a tight box, in which to pack combs loosely, and a small quantity of carbon disulphide a sure remedy.

* * *

It is said to be only a step from the sublime to the ridiculous. However this may be, I am quite sure that when honey is displayed at "28c a cake" and soap close by it at "5c a cake," it places the honey at a very decided disadvantage, as R. K. Rickard observes on page 532.

* * *

I am always fascinated by Mrs. Constance Root Boyden's racy letters from southern California. The climate, productions and ways of living, so different from the East, makes it seem like a fairyland, which we never weary of hearing about.

* * *

Ice cream cones, says G. H. Buffum, page 518, are an excellent way to advertise honey at fairs. It would seem to be especially good for introducing granulated honey.

PLEASE let me use that possessive pronoun again. You may take it to mean that "My California" is southern California, the coast belt, our own particular location or that I see the whole state through glasses which glorify it. For some reason that pronoun gives me a feeling of freedom in writing of the state.

In the days past when we used to discuss plans for moving out here the head planner of the family used to end by saying, "I am not sure you could stand the summers, Stancy." I shared that doubt so fully that all last winter, when we were shivering in an inadequately heated rented house, I looked forward to the long "semi-tropical" summer with such dread that I was thankful to be too cold.

Maybe it is too soon to speak with certainty, but up to this time (Aug. 1) we have had few uncomfortably warm days in the shade and the nights have been deliciously cold. Cool is hardly a strong enough word to describe nights when wool blankets are a necessity, and one often puts on winter wraps for evening riding. Perhaps the bracing air of the nights is what causes the mocking birds to practice their vocal exercises so assiduously. I don't mind bird music at night, even when it is just outside our windows and rather loud; but when the mocking birds urge us to "hurry up, hurry up, hurry up" for hours at a time in the middle of the night it is irritating although their voices are melodious. It isn't a guilty conscience or an over-active imagination which makes me think they are telling us to hurry, for my unimaginative husband hears those words too.

Although the days are rendered delightful by the ocean breezes which come from the south or southwest about ten o'clock and persist until sunset, the cool nights are so free from wind that casement windows and doors will stand out into the room at any angle without awakening sleepers by unexpected slamming, and this is true in spite of the fact that we always have open doors and windows throughout the house for cross ventilation.

We have been told that July is the month of the year when rains are least apt to occur here. Possibly just to keep up its reputation for the "very unusual," this year the weather treated us to a real thunder shower in the middle of July. There were lightning and loud thunder, especially toward the mountains, but only a few large drops of rain, enough to make me run for my typewriter and various other possessions on the trellised porch, but not enough for the weather bureau to measure. And before daylight on the morning of July 31 a gentle rain fell for half an hour.

Midsummer Days in My California

CONSTANCE ROOT BOYDEN
(Stancy Puerden)

ANOTHER reason for dreading the summers in the Golden State was because I feared the lack of rain meant the loss of so much of the

beauty of winter and spring. Here is where "My California" is a delightful surprise. It is true, hillsides which were green have turned a soft brown; it is true, Old Baldy's crown of snow has dwindled to the point of invisibility from the valley, and the mountains generally retreat into the distance behind a softening haze, while flowers are less abundant except where watered.

But there is so much beauty of a different sort left. In the place of barren brown vines, pruned back to little more than stumps, vineyards are all luxuriant, green leaves with bunches of green grapes showing among them; orange groves are bright with new leaves, and many of the other broad-leaved evergreens are renewing their foliage. The acacias, which were greenish-gold fountains of bloom in the early spring, are beautiful in a different way in the summer. There are varieties which bloom late in July, but my favorite, which is very fine when in bloom in early spring, is especially beautiful now. Its finely cut foliage is blue green with a soft gray cast in a certain light, and the effect of the whole tree is feathery and graceful.

A few days ago we wandered on to a road high on the Verdugo Hills on the southwest side of La Canada Valley. The road follows the curves of the hillside among beautiful estates, and on either side of it are planted these blue-green acacia trees. Far down in the valley one could see Flintridge with its curving drives, its country club and green golf course, and beyond, across La Canada where it merges into the broad San Gabriel Valley cut by the deep gorge of Arroyo Seco, could be seen Altadena nestling at the foot of Mt. Lowe. And the great range of mountains in the background was tinted soft rose, lilac and blue, and the air was so clear that the observatory on Echo Mountain stood out distinctly and the trolley line from that point on up Mt. Lowe could be traced. It is one of those views which makes one long to have all his friends present to share it.

Acacias are not alone in possessing that blue-green foliage. California is particularly rich in plants, shrubs and trees of that tint. At this time of year the leaves of the young eucalyptus shoots are a silvery blue green, forming a pleasing contrast to the golden green of the camphor trees and the deep green of many others.

Just as unusual to eastern eyes as the acacia is a tree with foliage like delicate ferns with deep blue or purple blossoms which come in July. A large tree in bloom looks

as if great bunches of violets were scattered thickly among its fern-like leaves, and where these trees are planted on both sides of an avenue the effect is wonderful, especially when seen against a distant background of sunset-tinted mountains.

IF May is the month when nature seems almost wickedly extravagant with flowers in California, then midsummer is a time when, aided by man with his irrigation, she is equally extravagant with fruit. You know how tantalizingly short the strawberry season is in the East. We have been enjoying frequent strawberry shortcakes for over two months back, and might have had them before that if we had felt justified in paying the price. And we are told we may continue to enjoy them as well as green peas until Christmas, although I think the price will again be prohibitively high in a few weeks. Even if it is, we think we are pretty fortunate to enjoy nature's finest berry for nearly four months in succession.

And soon after the strawberries and along with them came gooseberries, raspberries, currants, loganberries, blackberries, fresh figs, apricots, peaches, plums, fresh prunes, muskmelons, watermelons, pears and apples, for there are high valleys cold enough in winter and warm enough in summer to grow the finest apples. I think the season of most of these fruits is a little longer than in the East, and the season of the various fresh vegetables is also long. Strange to say, tomatoes seem to be no earlier than in Ohio, although they have long been on the market from Imperial Valley under an extremely high-price mark. And such grapes as the Concord are no further advanced than they are in Ohio at this season.

A few days ago we drove through picturesque Laurel Canyon and came to a point where the San Fernando Valley was spread out before us. I am positive the land of Canaan never looked richer or more beautiful than that valley. We live in a region in the San Gabriel Valley where the citrus fruits predominate, and, while it is beautiful at all times of the year, just now the fruit display is not so wonderful as in the San Fernando Valley or at least that part of it around Lankershim. We drove between miles of orchards, apricots, dusky red peaches of unbelievable size, translucent plums of red and gold, gold and green and deep blue, all with untouched bloom on them, groves of enormous, wide-spreading English walnut trees, melons of all varieties and further on great fields of corn. And across the fertile valleys were the velvety blue Verdugo Hills, with the peaks of the higher range showing beyond. You see I never can omit the mountains from any description of "My California."

This article should be accompanied by a photograph showing some of those fruit trees with dozens of props supporting their laden branches. At every few rods along the boulevard the passing motorist was tempted

by fruit displayed in baskets, crates and "lug boxes." There was such congestion at the regular fruit stands that it was offered for sale at many points between, generally beneath the shade of a wide-spreading walnut tree or perhaps a pepper tree. We have been rather pained and surprised at the high prices of fruit in this fruit state, but one often can pick up fruit and vegetables at bargain rates at these stands out in the country. It gives one a practical reason for urging her husband to take her for drives, you see.

ONE evening I noticed an advertisement of "Honey brannies" in the paper. It contained a testimonial from a man who had eaten a honey brannie in warm milk every evening at bedtime, thereby reducing his "too, too solid flesh" and greatly improving his digestion and health as well. (I don't believe they would reduce a thin person. If they improve the digestion they should merely tend to keep one in normal flesh.) The next morning I inquired for honey brannies at our near-by grocery and was informed that the grocer had not heard of them but had "sweet brannies" on hand. Of course I asked him to get me some honey brannies, and in the meantime bought a box of sweet brannies and found by the leaflet in the box they were made by the firm who advertised the honey brannies. The next afternoon I enticed the busiest man I know to help me hunt the firm of Genevieve Jackson, Inc., which manufactures the brannies with several other health foods. We found Genevieve Jackson, Inc., to be an enthusiastic young man. I believe he secured a position with Genevieve Jackson and worked up and finally bought the business.

These brannies are made of bran, not the chaff-like variety which is sold in cartons, but bran which includes enough of the grain to have considerable nutriment left in it. Combined with the bran is a little agar agar, a Japanese seaweed, and the whole is slightly sweetened to make it more palatable, pressed into oblong wafers and then dehydrated instead of cooked, thereby retaining its soluble minerals and vitamins unchanged.

The business is just in its infancy and until very recently has done practically no advertising, but people who came to southern California for their health bought the brannies, liked them, went back to their eastern homes and induced their grocers to handle them, with the result that I saw a man on the United States well dotted with black pins, indicating in what cities brannies may be purchased.

What is of particular interest to beekeepers is the fact that the honey brannies were made in response to a popular demand. The president of the company said he had received hundreds of letters, asking for a brannie without sugar, and I believe part of them requested that he use honey in the

(Continued on page 611.)

HOW full life is! One great glad morning last spring I was watching the bees on the stonecrop, the pink mossy three-fingered, or perhaps I should

say three toed, crow'sfoot, that grows so gayly on poor shallow rocky soil like some of ours (not all, though). I was sitting on a low flat rock in the middle of it, idly counting the bees, and feeling something at once strangely stirring and gently soothing, all alone there in the sun-lit quiet, when a sudden whirr of wings made me instantly all attention and very still. Right there, almost where I could reach her with my hand, came a little mother bird—unidentified, unfortunately, though she's none the less happy—nor am I, much—for my not knowing her name. There she was, with a wiggly breakfast for the younglings in their cosy nest among the buckbrush, close beside me. After she had flown off on another foraging trip, I parted the branches and saw the queer little babies, so unlovely in fact and so lovely in promise—and thought how some human souls are that way; just give them a little more time, a little more love, a little more sunshine, a little more strengthening of something wing-like—and watch the divineness come; and soar off towards God. I thanked the bees for stopping me there, feeling as though a shining little extra drop of joy had been poured out that spring morning for my drinking.

Another bird incident was not due to the bees, though, but to the former owners of our bungalow, who, worried lest the water pipes in the basement freeze, had wrapped them most fantastically with rags of every color. Where one of these sagged down into a bit of a pocket, quite private and undisputed, a darling, darting, funny little wren feathered her nest and reared her nurslings. You see, living thus in the country—how proudly I still say it!—we leave things pretty much open, it is so convenient to have garage doors standing wide when driving home. The garage is connected with the basement, so through the open doors the wren had found her cosy rag-hung opportunity under the water pipes. When we discovered her, "Now," we asserted in high glee, "we have to leave the doors open—for her; and for the little chappies later learning to fly." And what excitement the day they did fly out! They took the basement by storm.

Bees on Hop Clover.

Do bees work lespedeza? This question has been answered in bee journals by both yes and no. Personally I don't know—I've never seen them. But do bees work hop clover? This I do know, for this locality, for this season; by the unanswerable fact of having seen them work it. This was a poor season

Beekkeeping as a Side Line

Grace Allen

here for white clover, 1 a s t year's drought having killed most of it; we had really only scattering patches of young clover from seed.

But a good succession of rains kept minor sources blooming more generously and steadily than usual, and the bees found them all and called them good. One day about the first of June, coming home from somewhere—I'm always coming home from somewhere!—I stopped to gather daisies. They were so nearly all gone, who could resist those last ones? The particular field I wandered through was humming gently in the sun. It was bees on hop clover. They weren't fighting over it, you understand, yet you could see them all around on the tight trim little yellow blossom balls, gathering nectar. I didn't know it was hop clover—I must admit that—until the Head of Agriculture at Peabody College so identified the specimen I took in next morning. And he was backed up by the Biology man.

(I can't remember having ever seen hop clover listed among nectar-producing plants. It is not in my old A B C nor in Pellett's "Productive Beekkeeping," nor in a very recent list of Tennessee honey sources compiled by Mr. Buchanan. I had expected to get back my "Beekkeeping" books by Dr. Phillips and Mr. Pellett, both of which were loaned out to my class—and look it up before copying this, which was written several weeks ago. But meantime life led me so heart-breaking a way that all such matters were forgot. The books are still out—and this must go off today. What about hop clover, anyway?)

Driving Home from the Beeyard.

How long it does sometimes take to drive a Ford a mere mile! Especially if there happen to be "two of us." (Remember how Festus cried out to God?—"There are two of us!") And particularly when bees are thick on sweet clover and blackberries are getting ripe! And still more particularly, when those very two sowed that very sweet clover! For they must stop again and again to exclaim about the height of it and the bloom of it and the bees on it. More, O many, many more, than had been on the hop clover. Swarming on it, the layman would say. As for blackberries, how good things are that you pick yourselves, wild things ripening along a country road, that you gather and eat when you ought to be hurrying on home and getting dressed for company. (Yes, they got there when only 50% of us was ready! But think of the delight we had had and the memories woven into the very fibre of us by that one short drive from the beeyard home. And the company didn't mind. They said so.)

Veils vs. No Veils.

Some few beekeepers wear no veils at all. Like Dr. Sanborn of Vanderbilt University. Most of them wear veils steadily, when actually at work. Most of these, however, will occasionally open a hive or two, unveiled, especially colonies of known gentle disposition. Small colonies and nuclei are apt to be less resentful than full crowded hives, with a lot of spirited field workers hurrying in and out. So, like the young lady in the picture, one often opens such a hive without a veil. But one is wise to wear a veil, and have a goodly volume of smoke at hand, when investigating full-sized colonies.

[Beginners especially should be cautioned about handling bees without adequate protection. There are times when it is reasonably safe to handle even strong colonies without a veil, and with some gentle strains of bees even without smoke. The danger is that a beginner, not knowing that bees that are gentle at one time may become quite cross at another, may get into trouble without a veil.—Editor.]

"The Friendliness of Beemen."

The very first thing I ever wrote for Gleanings had that for its title. And what



This young lady gets along very well without a veil but most beekeepers wear veils when actually at work in the apiary.

is finer in all this world of uncounted fine things than friendliness? And how friendly all beekeepers are!

One day last July a card came saying that Mr. and Mrs. D. C. Scott of Caney Spring, Tenn., with several members of their family and Geo. G. Anislie, government entomologist, would be driving through the country the next day, and were planning to visit us at our apiary; and inviting us, the "two of us," to join them in a roadside lunch. On the appointed day, a hearty voice over the telephone, calling from near our yard, said, "Well, we're here." I jumped into the car and sped over to join them—Mr. Allen, office man that he is, being unable that day to come out to join us. There were wayside introductions and then on the warm grass under the hackberry trees in the little grove between the beeyard and

the road, we broke bread together—good homemade bread, too, and fried chicken and good country ham and peach pie and a lot of other things—more, oh much more, than even six grown-ups reinforced by three happy children could dispose of. So Mr. Scott's daughter fixed up a picnic plate for Mr. Allen—and "Um-m, that's good country ham," he said.

Mr. Scott, in spite of his grandchildren, is a young beekeeper of three years—full of enthusiasm and the delight of the apiary. I am afraid he was scandalized beyond recovery to learn that I knew only one kind of Miller queen cage, the kind I have—No. 2, I think he said. I had really thought a Miller cage was a Miller cage! So it was a profitable as well as a pleasant day for me. Mr. Scott has some good ideas of some experiments he is going to try in wintering. (Hasn't it been a long time since I have referred to wintering? You can't tell—I may start it again—or I may avoid it forever!) Mr. Anislie is a beekeeper, too, or has been, anyway. So we had a pleasant and all too short chat, ranging from Miller cages to foul brood in Tennessee.

After the party broke up, the three cars ran over to the bungalow and stopped for a few minutes; part of us walked down to see the Hubam, and then, with gay good-byes and a wave of the hand, they were gone, headed toward the curve in the road where the Lone Oak stands, on their way to Granny White Pike and Radnor Lake. Once more—and how happily!—I had known the friendliness of beemen.

Published by Request.

[By request we are republishing Mrs. Allen's beautiful verses written soon after Dr. C. C. Miller's death and first published in her department in November, 1920. It seems fitting to republish this now, since this issue contains the announcement of the location of the Miller Memorial Library, and Sept. 4 is the second anniversary of the death of this great beekeeper.—Editor.]

How you would love this hour! The morning mist,
All touched with gold and blue and amethyst,
Goes rising slowly, lost somehow in light,
And lo, the sun-tipped hills break into sight!
Does Death come so? Do tender earth-born things
And human love, however close it clings,
Dissolve at last and rise and pass away
And show great hills of light, and God, and Day?
The golden peace of autumn lies around.
You loved it, too, and most, perhaps, this sound
Of bees that hum, whose frail undaunted wings
Fill wondering souls with strange imaginings.
Is peace around you now, so great, so deep,
That we who do not know it call it sleep?
Are wings there, too, God-made of dream and fire,
That leave ungarnished no divine desire?

Today this earthly beauty grips me so
I wonder what new radiance you know,
Such haunting music fills our quiet places—
What symphonies ring down unbounded spaces?
Not ours to ask—ours but to dream the dream,
Ours but to keep the high-held torch agleam,
Ours but to walk in reverence and pride
Because you lived, and loved, and smiled, and died.



FROM NORTH, EAST, WEST AND SOUTH



In Southern California.—Considerable honey has been sold, and buyers say that there has been enough honey offered for sale to make it unnecessary to go out to look for any. The price has been going from 6½ to 7c for the light amber to 8, 9 and 10c for the white sage and orange. The market seems steady, with prospects of getting stronger as the more anxious ones get their honey disposed of.

The affairs of the Beekeepers' Exchange have been turned over to M. H. Wells, assignee. Mr. Wells represents the First National Bank, that institution having financed the Exchange. All of the members have received their statements and with few exceptions are willing to pay back the money they were advanced in excess of the amount the honey sold for.

Some beekeepers are moving to the beans; but, after a season like the present, when every beekeeper has made a crop, the desire to move for the chance of more honey is not nearly so general as in those years when the crop is short or in many cases a failure.

Crops seem to have varied from a can or 60 pounds per colony to two cases or 240 pounds (for a very few of the best beekeepers). Here, again, the cost of production will be a factor almost impossible to determine accurately. Some of us must produce a crop almost entirely with hired help. This ranges down to one man and his wife, who have produced over 50 tons of honey without a day's assistance, at the same time doing considerable work on their fruit ranch. This woman did all of the work in the extracting-house and, so far as we know, holds the world's record for uncapping and extracting a crop of honey by herself. She used an eight-frame Cowan extractor and engine. The honey was all brought to a central extracting-house. We may tell more fully of some of the manipulations and work of the man later. His methods and short cuts come from close observation and the ability to apply the things he has learned. His average per colony will run over 260 pounds, spring count.

With an abundance of bloom, such as is seldom seen throughout southern California, the yield of honey from the wild buckwheat was as near a failure as one could well imagine. How to account for this is not easy to conjecture. It seems to be just one of the freaks of nature that will happen. Other flora seemed to furnish nectar in abundance; especially was this true of the black sage. During our long experience in southern California, we recall only one season when this plant produced as abundantly and as long as this year. One beekeeper said that the frost cut all of the first bloom that year the same as it did this year. His idea was

that the frost might have something to do with the great flow of nectar.

Corona, Calif.

L. L. Andrews.

* * *

In Northern California.—From all parts of our section the spring flow was very late in starting. This was to be expected owing to the cold winter and spring. The flow was of short duration, however, and very few districts reported any appreciable surplus. The cold spring was not propitious for plant growth, and the natural honey flora was incapable of furnishing its usual surplus of nectar. Sage was particularly disappointing, while fruit bloom, mustard, wild radish and likewise others yielded nectar very sparingly. The summer flow from our mainstay, alfalfa, is now on, and is being utilized by a majority of beekeepers. The fall flow is problematical. Normally, good spring rains insure a fair fall flow from the plains; but, during the past spring, which it will be remembered was very backward, we had extraordinarily late rains in the valleys. Undoubtedly the fall plants will be late in blooming, and, if good bee weather does not extend well into October, the blooming periods of the late flora may also be curtailed. Usually but not always, when a season starts out abnormally like this one, it finishes very much after the same fashion.

During good years when we are kept busy most of the time extracting honey, we are very apt to neglect the bees to a certain extent; that is, some of us do not pay enough attention to requeening, nor do we attend to several other little things that are quite necessary. Apparently these matters are overlooked or lost sight of to a certain extent. When lean years come we have ample time to requeen all colonies, which, by the way, is our first duty. We ought also to level up all colonies, do a little painting and mending, weed out some of the older combs, and, another important thing, make as much increase as we possibly can. It is a very good plan to cut down increase, double up the weak and produce honey in good years and, to go the limit on "increase" during the bad seasons. Orange and sage producers could be benefited immensely by following this plan, since they have a source of honey which not only is always salable but in addition is under their control, owing to the restricted areas in which the plants are grown.

I regret to announce that C. D. Stuart of Chico has resigned as secretary of the California State Beekeepers' Association. It will be remembered that Mr. Stuart, who is also a certified public accountant, has offered to assist his fellow beekeepers in keeping better beekeeping books. It is a generous offer, and this important phase of our work needs someone like Mr. Stuart to arouse our interest. How many of us, aside



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from keeping bees for the pleasure which they bring us, are making a fair profit? R. M. Randall is now acting secretary of the association. Correspondence, I believe, should be directed to the organization's headquarters at Hutchinson Building, Oakland.

M. C. Richter.

Big Sur, Calif.

* * *

In Texas.—It is often said that prosperity comes only through adversity. The meeting of the Texas Beekeepers' Association at College Station, Texas, July 25 and 26, was attended by a far larger number of beekeepers than the meetings of former years. During the first session a roll call was held at which each beekeeper gave a report on the honey crop condition in his section. This report showed that the honey crop of 1922 will be the smallest in years, but it also showed that the beekeepers were very optimistic and more devoted to beekeeping than ever before. Some few localities reported fair averages, and the beekeepers in the cotton section have their crop yet to gather, so that, after all, Texas may make a fair crop.

J. D. Yancy of Bay City, Texas, gave one of the best papers that has been read before the association for many years. Mr. Yancy's location is unique in that it lies along the swamps at the mouth of the Colorado River and some of the larger creeks that enter the gulf in the same vicinity. Mr. Yancy is one of the few beekeepers that has made a study of his honey flora and manipulates his bees so as to take advantage of these flows. His description of the relationship between his bee-work and honey flows was extremely interesting. Mr. McKee of Valasco gave a very unique description of his beekeeping activities. He does his beekeeping by boat. He owns a line of out-apiaries, located on the banks of the Brazos River extending 60 miles up the river from the gulf. Mr. McKee described his system of visiting his outyards, using his boat as an extracting-house and hauling his honey in a barge towed by the boat. Messrs. Yancy and McKee are both barrel-honey men. They find that this method of packing honey is the best adapted to their use, as the proximity to salt water causes tin to corrode very rapidly. W. O. Victor gave his experience in making increase with bees. The discussion which followed this paper brought out some very interesting facts relative to Texas beekeeping. The majority of those present desired to know how to manipulate bees without making increase, and the answers to this question gave some very unique methods of swarm control that are in use among the Texas beekeepers. Will Zimmerman explained the workings of his system of bee management with his universal hive-body. He illustrated his talk with his hive-bodies

themselves. Dr. M. C. Tanquary, assisted by his force, gave a full report upon the inspection work and the experimental apiaries. E. G. LeStourgeon of San Antonio reported upon the activities of the Honey Producers' Association.

A number of other interesting papers were given and the beekeepers voted the 1922 meeting a complete success.

The weather condition for the past month has been normal summer weather. The honey secretion of the cotton plant has given yields far beyond its accustomed limits. It is believed by the beekeepers of southwest Texas that the chaparral plants are coming into a better condition than for a number of years.

In connection with the work of the experimental apiaries, a few colonies of bees were placed at seven of the sub-stations of the Experiment Station, and beekeepers were surprised to find that the bees on the sub-stations at Spur and Lubbock, which are located in the northwest section of the state where beekeeping is unknown, have done extremely well.

H. B. Parks.

San Antonio, Tex.

* * *

In Wisconsin.—Knowledge mostly comes to us slowly, but your correspondent gained considerable knowledge and lost two perfectly good hive-bodies and several inches of skin today in one second. This morning while fumigating some hive-bodies with carbon bisulphide I thoughtlessly brought a match near two of them. Naturally, the result was an explosion which completely demolished the hive-bodies and frames and almost demolished the writer. While unable to move about freely, I am still able to write.

Contrary to reports, Wisconsin does not have a bumper crop of honey this season. As a matter of fact, the indications are that the crop is only fair at the present time although the fall flow may increase production in some parts of the state. In the vicinity of Madison the honey flow is practically over, leaving the beekeepers with a surplus of from 50 to 75 pounds and in some cases even more per colony. The crop was secured about two weeks earlier this year than last; and it is evident that the marketing season has now started, as a number of beekeepers in the state have started peddling honey at 15c per pound. This is always sad news to the beekeeper who is trying to get a fair return for his labor and product; but in the end practically every beekeeper is able to dispose of his crop, and the few beekeepers who cut prices do not seem to hurt local conditions a great deal. The situation in Wisconsin seems to be improving generally. More and more beekeepers are writing in, asking about prices and also expressing a desire to engage in cooperative marketing. Reports from other dis-



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tricts show that clover bloomed very abundantly in all sections of the state, but that it did not secrete as was expected. Continued cool weather during the daytime was probably the cause. In central and southern Wisconsin a good deal of clover was frozen out, and no crop was secured in spots except from white clover. The eastern counties seem to have suffered the most, although within the last two weeks a light flow is reported as coming in from sweet clover. In Fond du Lac and Dodge counties, the clover yielded fairly well. In Washington County the yield was light. Reports from Waukesha and Milwaukee County indicate a poor crop for that region. One beekeeper at Waukesha reports bees working quite steadily on alfalfa bloom. Basswood has behaved about as usual, blooming very heavy in practically all sections but yielding a surplus over only limited areas. Basswood trees on high ground did not seem to yield much surplus, although bees were at times quite abundant on the trees. Goldenrod is reported as coming on with a heavy bloom, and the bees are starting out as though they would be able to gather a surplus.

The most important feature of Wisconsin beekeeping at the present time is the reduction in the amount of foul brood through the area clean-up campaigns being carried on by the State Department of Agriculture.

The summer outing of the beekeepers was held at Bay Beach, Green Bay, Wis., August 7 to 11. As usual the beekeepers came from all parts of the state, and even some from adjoining states. Probably no greater array of national beekeeping authorities was ever present at a summer meeting. All of our beekeepers expressed themselves as being paid many times over for the cost of attending the meeting.

During September Wisconsin beekeepers should be very careful to see that the bees have plenty of stores for winter. In those sections where no fall flow occurs the bees cannot help but be short as there seems to be a much greater tendency to extract close, and there is bound to be a longer period than usual when no nectar will be coming in from the field. This is especially true of nuclei started toward the end of the honey season, and many of these will surely starve before fall if not given stores at once. About the first of October all colonies should be gone over, and those not strong enough to winter well should be united.

Madison, Wis. H. F. Wilson.

* * *

In Utah.—The conditions in northern Utah have been very favorable so far this season. August is generally our best month for surplus, and all colonies now should be strong and well stocked with brood and honey. What the bees make from now on will be mostly surplus.

The inspector from the Uinta basin, where

usually big crops are gathered, reports that the solitary bees, ground bees and other wild bees are so numerous that they have consumed the honey resources of the country to such an extent that the crop there will be very light. As a remedy, he advises plowing the ground where they live. Isn't this something new?

Utah will not raise so much honey as last year, taking the state as a whole, and, as all old honey has been consumed or gone forward to other markets, these facts, together with the advanced price of sugar, should hold prices as good as last year, or better. While the local demand is very good, honey is not moving quite up to normal, on account of the stringency in money matters, and as yet there have been no calls for carload lots. The quality, this year, is very fine in body, color and flavor. Utah is a great consumer of honey, and the demand will increase when the farmers begin to realize on their crops.

M. A. Gill.

Hyrum, Utah.

* * *

In Oregon.—Early reports indicate that the honey crop in Oregon has been average, if not slightly above average. This is especially true in central Oregon and in the Umatilla District. In the Willamette Valley the clover suffered considerably from lack of rain and yielded relatively little nectar, but considerable nectar from the other plants has been harvested of a darker and inferior grade. The market seems to be about normal for this time of the year, which is ordinarily very quiet.

No doubt most of the good beekeepers of Oregon will remember clearly their serious winter losses of the past winter, and will be making careful preparations for the coming winter to avoid a repetition of last year's fatality. However, there are many who will forget, and it would not be out of place to emphasize again the importance of right preparation for wintering, which here, as everywhere, includes a strong colony of young bees, ample stores and sufficient protection. In order to have the large force of young bees, it must be remembered that the colony must be headed by good young queens with favorable conditions to build up a colony during late August and September. The importance of having sufficient stores should also be emphasized. In this milder country bees naturally consume a larger amount of stores than in a colder section where they are not enticed out so frequently by fine weather.

In addition to giving the bees some form of protective covering, we must not overlook the importance of having the bees located so that they will not be subject to prevailing cold winds. More beekeepers than ever are talking winter protection, and many are making definite plans



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to give their bees much needed protection in some form. There is no question but that the bees would come through winter in much better condition if some protection was given.

Good wintering will do much to eliminate European foul brood, since the colonies which come through winter strong will be in a better condition to throw the disease off when it does appear. Many beekeepers, including the writer, are finding that the strong colonies show symptoms of European foul brood as soon as many of the weaker colonies, or sooner; but it is the writer's observation that these stronger colonies, when headed by good queens, are almost sure to rid themselves of the disease when a moderate honey flow starts, while the weaker colonies are overcome by the disease. Some beekeepers are reporting favorable results from stimulative feeding to assist the strong colonies in throwing off the disease.

The writer, as secretary of the Oregon State Beekeepers' Association, has been appointed superintendent of the Bee and Honey Department of the State Fair, and elaborate plans are being made to put on an educational exhibit which will be well worth while.

H. A. Scullen.

Corvallis, Ore.

* * *

In Pennsylvania.—At this date (August 1) the white honey flows from all sources are gone, and the crop generally over the state is one of the smallest I have ever known. Some of the better beekeepers report a fair crop, while others have little or none. Excessive swarming has added to the beekeepers' difficulties. In the last few days I have seen new swarms starving and egg-laying at a standstill in many colonies. In eastern counties a heavy flow of honeydew is helping over this dearth, but does not make a cheerful outlook for winter. Bees having honeydew and wild aster honey for winter stores should be fed about 15 pounds of syrup made of granulated sugar and water, about 75 per cent sugar to 25 per cent water. This feeding should be done about the time egg-laying ceases, which will be late September or early October.

Unusual interest is shown in better wintering. This is a good indication for the future of beekeeping in Pennsylvania. Those who winter outside should prepare the packing cases in September and pack the bees any time after the honey crop is gathered. About the time of the first killing frost is right for packing bees, even if brood-rearing is still in progress. Better have the bees warm enough so that they will hang out after packing than to let the work go until freezing weather. They will go inside when cool weather comes. Feeding can well be done after the bees are in the cases, by leaving off the top packing and feeding

from the top inside of an empty super. We prefer the five to ten pound pail with numerous perforations in the cover, inverted over the frames, to any other type of feeder.

The idea of the two-story hive with the top one full of food, a young queen reared in August, a good cluster of young bees and a good packing case is taking hold here. Those who have their bees so fixed this fall have already solved the winter and spring problems and largely settled the question of a honey crop next summer.

Several new bee-cellars have been constructed this year, which are especially suited to northern Pennsylvania conditions. Deep under the ground, so that there is little change in temperature and no ventilation, is the idea being used. The food for cellar-wintered bees must be of the best.

Little interest is being shown regarding the honey markets, although the beekeepers are hopeful of a buckwheat honey crop. It would seem that prices should remain about the same as for last year. Geo. H. Rea.

State College, Pa.

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In Michigan.—Reports received in this office indicate a fair crop in the northern portion of the southern peninsula, practically complete loss of the clover flow in the upper peninsula due to a heavy frost during the blooming period, and a very moderate crop in the southern portion of the state on account of drought during the blooming season, followed by cool rains. Some portions of the Thumb district have a very indifferent crop. Other portions report from 40 to 70 pounds per colony. Although very little honey was carried over from last season, some beekeepers are sacrificing their honey crop far below market prices. Every effort is being spent to encourage beekeepers to inform themselves of market conditions and obtain a fair price for their honey. The prospect for a fall flow from goldenrod, asters and other swamp flowers is very good, provided we have sufficient rainfall and warm weather during the coming month.

The summer meeting of the Michigan Beekeepers' Association, which was held at Alpena July 26 and 27, was well attended. A. I. Root and Huber Root both attended and appeared on the program. Michigan beekeepers feel that they were especially honored to receive a visit from the dean of American beekeepers, as his health does not allow him to visit many meetings in the North. His personality and address were inspiring. His recounting of associations with Langstroth, Quinby, Wagner, Doolittle and others emphasized the wonderful progress which has been made in beekeeping during the last 50 years.

The program of the "Area Clean-up Inspection Campaign," now being carried on by the office of state apiary inspection, is



FROM NORTH, EAST, WEST AND SOUTH



making appreciable progress. The upper peninsula is now free from disease. Several counties in the northern part of the lower peninsula are quarantined, and after rigid inspection are practically free from disease. Inspectors in several counties in the southern part of the state report from four to twenty townships free from disease. Surely Michigan beekeepers should take pride in the work which is being done to eradicate and control bee disease in Michigan.

Federal students taking courses in beekeeping at the Michigan Agricultural College, who purchased approximately 200 colonies of bees in the spring, have increased their colonies in some cases from 10 to 50. Many of these students now have apiaries started which will earn them considerable revenue next season. Furthermore, in the operation of these colonies through a complete season they have fixed in mind many details of manipulation which would have been lost without opportunity to practice them as instructed. Russell H. Kelty.

East Lansing, Mich.

* * *

In New York.—The yields of clover honey throughout the state have been very much spotted, although excessive rains in June were general. In the same county one beekeeper will report a 100% crop, whereas another will report 25%. Swarming was excessive in June and early July due to the heavy rains which kept the bees confined to the hive and thus created great congestion of the brood-nests. The comb honey crop is over; but beekeepers in some localities seem panicky about selling their crop and are offering it to the grocers, in some cases, two sections for a

quarter. The comb honey crop throughout the United States is apparently light, and I believe that fancy white comb honey will sell for not less than \$5.50 a case in the very near future.

Many beekeepers are introducing new queens at this time of year, and such a practice is of course to be commended. A great many, however, make the mistake of introducing these queens into a honey-bound and pollen-clogged brood-chamber, insurmountable barriers to the most willing queens. Brood room should be amply provided during early September, and all colonies that are not strong in young bees by the end of the month should be united with other colonies.

The prospects for the buckwheat crop are not especially good. The acreage is small, and much of the buckwheat planted has been damaged by the August storms. Only within the last few days has the weather been favorable for gathering nectar from this source.

R. B. Willson.

Ithaca, N. Y.

* * *

In Arkansas.—Arkansas is to have its second annual state fair at Little Rock Oct. 9 to 15 inclusive. This is an opportunity for beekeepers of this state to get before our people nature's sweets produced in Arkansas. Those who can do a bit toward making this exhibit a success should write at once to H. K. Thatcher, Extension Division, 310 Donagay Bldg., Little Rock, Ark., advising him what they can do, and at the same time give him the names of beekeepers whom they know.

Elba, Ark.

J. V. Ormond.



The hives of bees themselves make a most effective signboard for advertising honey.

HEADS OF GRAIN FROM DIFFERENT FIELDS

Robbing a Means of Selection.

I have, as a rule, seen robbing mentioned as a kind of inexplicable occurrence, or sad thievish trait in the character of the otherwise so virtuous bee, slightly hinting at the sad occurrence even in the animal world of the original sin. I admit that it is a very annoying thing, and under modern conditions even a very baneful thing, inasmuch as it is an effective means of spreading disease. But considered under natural (not domestic) conditions, it seems to me to be a most effective means of selection; the means by which the weaker strains were eliminated, and only the strong ones left to perpetuate the race.

St. Thomas, Virgin Islands. Axel Holst.



Wild Cucumber Near my home is a Missouri Honey Plant.

Near my home is a Missouri River bluff about three miles long and 150 feet high. It is no exaggeration to say that this bluff is completely covered with wild cucumber vines. They have choked out the underbrush, climbed the trees and covered hundreds of feet square with a thick carpet. This condition has prevailed only for two years, the vines formerly not being noticeable in any way.

It blooms for four or five weeks, and up until noon is alive with bees, wasps, flies and many other insects. It seems to yield large quantities of nectar, and the bees go wild over it. Last year four stands of my bees averaged 60 pounds from this source, there being practically nothing else for them to work on. The honey has an excellent flavor, better than clover to my mind, and is very thick, with a light amber color.

Last year one vine grew out of a small hotbed in my back yard and was allowed to mature. It completely covered a space 35 by 70 feet, went all over a large cherry tree, and I think would have entered the house if allowed. The main stalk of this plant was thicker than a man's wrist and had a taproot four feet long.

The early honey flow in this vicinity was a complete failure, none of my bees storing enough to winter them—to say nothing of surplus. All beekeepers I know are in the same boat, so the wild cucumber is a big help.

Incidentally, the wild cucumber last year choked out many acres of elderberry bushes, much to the chagrin of the home brewers.

Kansas City, Mo. C. J. Latham.

[Wild cucumber is usually identified as *Echinocystis lobata*, also called the wild balsam apple. It is thus determined by Pellett in his book on honey plants. There are, however, several other climbing vines, which belong to the gourd family or Cucur-

bitaceae, and are known as climbing cucumber vines, as the star cucumber (*Sicyos angulatus*) and creeping cucumber (*Melothria pendula*). They occur in many eastern states and extend westward to Kansas and Missouri. Specimens of the flowers and leaves are, therefore, very desirable for determination with certainty. Blue vine is also very abundant on the bottom lands of the Mis-



Wild cucumber in bloom.

souri River in the state of Missouri, especially in Chariton County. Assuming that wild cucumber is *Echinocystis lobata* it has been reported to yield a white honey in certain localities in the bottom lands of the Mississippi and Missouri Rivers. In the Beekeepers' Review, November, 1902, at Humboldt, in the southwest corner of Nebraska, "the garden of the state" it is described as on stream flats covering the ground completely and tree trunks, transforming the forest into a scene of surpassing beauty. "Each vine bears clusters of small white flowers, which yield honey abundantly until the vine is killed by frost." I have cultivated wild cucumber in my garden at Waldoboro, Maine, and enclose a photograph of the flower, natural size. It proved to be practically nectarless here, and was very rarely visited by bees. However, all the species of the gourd family are nectariferous; and it is very likely that under favorable conditions, in a climate where it flourished as a wild plant, it would yield nectar freely.—J. H. Lovell.]

IN the North the bees complete the shaping of their affairs for winter during September or early in October. If nectar is available they now store more in the brood-chamber, sometimes crowding the brood-rearing space during the latter part of the month until but little brood is left. It is interesting to note that the honey is stored as far as possible from the entrance, thus placing it above and back of the brood. Finally, late in September or early in October there is left only a little sphere of brood in the lower front portion of the brood-chamber if the colony is well provisioned with honey for winter. Then the queen quits laying entirely or the bees refuse to care for the few eggs she does lay, and brood-rearing is suspended for the winter. This usually occurs about October 1 in the North and a little later in the South. When the last of the brood emerges there is left a spherical portion of the brood-chamber containing vacant cells. This is where the winter cluster is formed, if the interior of the hive becomes so cold that the bees must cluster away from the walls of the hive and the ends of the combs.

Noting the location of the winter cluster in October or November in such cases, some have concluded that the bees cluster near the entrance because they need ventilation; but, if they look later after the bees have consumed most of the honey in the front of the hive, they will note that the cluster has moved away from the entrance. The amount of stores a colony has, can thus be estimated by the position of the cluster.

Since the bees now arrange things in the hive for their safety during winter, the position of the combs should not be changed unless necessary. Combs can be taken out to examine the colony at any time desired, but they should be put back into the hive in the same order they were before. Ordinarily it is not necessary to take out any frames from the brood-chamber in September. If the colony had a young queen that was laying last month, we may be reasonably sure she is still all right. The amount of honey the colony has, can be estimated by lifting the hive and looking in at the top. Sometimes lifting up a single frame from the middle of the brood-chamber tells the beekeeper as much about the condition of the colony as a complete examination of every comb.

Honey Plants That Bloom in September.

September is also the time of fall flowers, and in some localities there may be a good honey flow some time during the month. In the buckwheat region the buckwheat honey flow, which begins in August, sometimes continues during the first week or ten days of September. In the far north where willow-

TALKS TO BEGINNERS

Geo. S. Demuth

herb is abundant, the honey flow from this excellent honey plant often continues into September. In portions of the northeastern states, especially

the New England states, goldenrod often continues furnishing considerable surplus. In swampy places the swamp Spanish needle and other fall flowers come into bloom early in September, furnishing a rich amber honey sometimes in large quantities. In the Mississippi Valley, heartsease (sometimes called western smartweed) often continues to yield sufficient nectar to cause the bees to work in the supers well into the month of September. Later in the month and extending into October, the asters, if abundant, continue to tempt the bees to the fields even after the weather becomes too cold for their safety.

Much depends upon the locality whether the bees gather much or little during September. In some localities considerable surplus is stored, while in others the bees gather less than they consume. Sometimes during a light fall honey flow when the bees must spend so much time in searching for nectar, the colonies become greatly depleted in numbers, so fall honey flows are not always beneficial. However, brood-rearing is usually stimulated by the incoming nectar sufficient to make up for this depletion.

Where the fall honey flow is heavy it may be necessary to extract the finished honey from the supers early this month to give the bees room. Instead of tiering up the supers as during the early honey flow, it is usually better to have but one extracting-super on each hive during the fall honey flow, for the cooler nights and the tendency of the bees to concentrate their work are not conducive to good work in several supers. For the same reasons, it is usually not advisable to produce comb honey during the fall honey flow.

Colonies Become Smaller as Autumn Approaches.

The beginner will probably be surprised to note the decreasing number of bees at this time. When compared with their great strength in June and July, the colonies now appear to be small. Regardless of their strength in midsummer there is now a tendency for the colonies to become uniform in strength, so that all colonies having good queens, plenty of food in August and September and sufficient room for the queen will be about the same size, which is their normal winter strength.

If nectar is available now, colonies having good queens may have brood in six or eight combs or the equivalent of four to six combs completely filled with brood. If nectar is not available but the colonies are

well provisioned, having not less than the equivalent of three full combs of honey, there will be less brood, probably the equivalent of two combs completely filled. If the queen is old or the colony has only a few pounds of honey, the amount of brood will be considerably less. For the safety of the colony there should be at least the equivalent of two full combs of brood in each hive at this time. This brood is of course usually distributed in three to five combs.

Colonies that are prosperous and continue to rear brood to the extent of at least the equivalent of two well-filled combs this month should be in good condition for winter; but colonies that are weak, short of stores, have a poor queen or become queenless during the fall brood-rearing period (August and September) will be in poor condition for winter. The fate of the colonies during the next six months, therefore, depends largely upon conditions this month.

How to Unite Weak Colonies.

Any colony that is too weak to take care of the equivalent of at least two or three solid combs of brood the first of September, especially in the North, should be united with another weak colony to make up a colony strong enough for winter. To unite two weak colonies, remove the cover of one hive and spread a sheet of newspaper over the top, the paper having a few pin holes punched through it; then lift the other hive from the bottom and set the now bottomless hive directly on top of the newspaper, thus making a two-story hive, in which the two colonies are separated only by the sheet of newspaper. If the colonies to be united are some distance apart in the apiary, the uniting should be done in the evening after the bees quit flying, or early in the morning before they begin to work in the fields, so that all of the bees of the colony that is moved are in the hive at the time of moving. If there is a difference in the strength of the two colonies the weaker colony is the one that should be moved and placed on top of the stronger one. The bees in the two colonies thus united will gnaw away the paper, and unite without fighting.

If there is a choice between the queens, the inferior one should be hunted out and killed before uniting; but, if the queens are equally good, the job of disposing of one of the queens can be left to the bees. Later all of the brood can be put into one story, and the other either taken away or left for the bees to fill if more room is needed.

Colonies Should Have Plenty of Honey.

If any colonies are found to be short of stores early this month, causing brood-rearing to be reduced below the danger point, they should immediately be supplied with combs of honey taken from colonies that can spare them or they should be fed about 15 pounds of granulated sugar dissolved in 12 to 15 pints of water. Such thin syrup can be fed early in September, but it is not suitable for feeding late in the month or

in October. Syrup for later feeding should be much thicker.

What To Do With Queenless Colonies.

It is already rather late to do much with queenless colonies in the North; but, if such colonies are not too weak and can be given a queen at once, they may still rear enough brood to enable them to pull through the winter. When this can not be done the queenless colony can be united with another colony by the newspaper method described above, placing the queenless colony on top of the other colony.

It is also rather late in the North to replace old, failing queens with young ones. This should have been done before the middle of August for best results, but if attended to at once the young queen will still have several weeks to lay before brood-rearing ceases. The old queen should not be removed until the new one arrives, for the break in brood-rearing incident to requeening should be made as short as possible. Colonies can be requeened, even after brood-rearing has ceased, in order to have young queens in the spring; but, of course, when young queens are introduced so late, they do not benefit the colony for winter.

Marketing the Surplus Honey.

Probably most beginners who have produced surplus honey have already sold all they do not care to keep for their own use. If not, it is well to remember that the next three months are the best selling months for honey. Those who have only a few colonies can sell more than they can produce to their neighbors or to the local groceries. People apparently like to purchase honey from a local beekeeper, and by putting the honey up in attractive packages, stamping the name on every section of fancy comb honey and putting a neat label on the packages of extracted honey, a local beekeeper can sell large quantities of honey. As a rule, it is not best to sell large packages of honey to consumers. The packages should be small enough to leave a taste for more. For this reason an ordinary quart fruit jar, which holds three pounds of extracted honey, is plenty large enough for a glass package, and the five-pound pail is a good size for tin. For small families the ten-pound pail is too large; for, strange as it may seem, some will buy a five-pound pail of honey at frequent intervals, while if they take a ten-pound pail they seem to tire of honey before it is all gone, and quit buying. Many good customers for honey have been lost because an ambitious salesman talked them into buying a sixty-pound can instead of a smaller package.

Beginners who have a talent for selling honey will find it profitable to purchase honey in the bulk from other beekeepers or from dealers, to supply their customers after their own crop has been sold. Those who sell honey locally should study carefully our market pages in establishing their prices, and should also read the special articles on marketing in this issue.

QUESTION.
—I am digging a basement under

my summer cottage, which is located high and dry. The basement will be eight feet deep, 16 feet long and 16 feet wide.

As there will be no occupant of the house during the winter the question arises whether this basement will be too cold for wintering bees where the temperature during January and February often reaches 40° below zero. Would it be well to put boards around the hives and pack them with six inches of leaves? R. Turnbull.

Minnesota.

Answer.—Such a basement would no doubt become too cold for good wintering in your climate, especially if much of the upper portion of the walls is exposed above ground. You may be able to winter the bees successfully in this cellar by packing as you describe, but it will be better to pack the cellar itself by banking up the outside with straw two feet or more above the top of the basement walls. It may also be necessary to put some kind of packing over the floors above to keep the temperature of the basement above 45°.

A better plan would be to dig the basement deeper into the ground, then put in a false ceiling about three feet below the surface of the ground, filling the space between this false ceiling and the floor above with packing material such as dry forest leaves, planer shavings or sawdust.

Bees Rear Queen in 11½ Days.

Question.—Why do all the books give 16 days as the time for the development of a queen when my bees reared a queen in 11½ days.

Virginia.

Carrington Callaway.

Answer.—The development period as given in the books is computed from the time the egg was laid, while in the case you mention the queen was no doubt reared from a larva at least one day old. Since it is three days from the time the egg is laid until it hatches, this would make four to four and a half days to be added to the 11½ days in the case you mention, making the total period for development 15½ to 16 days.

Insufficient Stores Left After Extracting.

Question.—If a colony fills three extracting-supers and I take them all off, will it be necessary to feed this colony sugar syrup for winter?

California.

L. J. Heinzer.

Answer.—If there is no later honey flow to supply stores for winter, it will be necessary either to feed such colonies for winter or to give them frames of honey. Often it is not safe to extract all the honey from the supers even when a later honey flow is assured, for there may not be enough honey left in the brood-chamber to enable the colonies to keep up brood-rearing until the later honey flow begins. Such close extracting no doubt puts more colonies of bees out of commission for the next season, every year, in this country than all the brood diseases com-

GLEANED BY ASKING

Geo. S. Demuth

bined. If all the beekeepers in the United States could in some way be induced to leave 40 to 50 pounds of honey in each hive at the close of the season for the

bees, the total honey crop of the country the next season would no doubt be more than doubled. The successful beekeepers are those who supply their bees with an abundance of stores at the close of the season or who are located so favorably that nature supplies sufficient food for the bees after the honey has been extracted.

Wintering Two Queens in One Hive.

Question.—Is there any way of wintering two queens in one colony or in one hive?

Kansas.

A. E. Zellner.

Answer.—Two or more queens can be wintered in the same hive but not very well in the same colony. The hive can be divided by a tight-fitting division-board and provided with a separate entrance for each division so that two or more nuclei can be wintered in one hive. Queen-breeders sometimes winter surplus queens in this way to fill early orders in the spring. It will be well to have these small colonies strong enough to cover at least three combs. A division-board can be inserted in the middle of the hive in the fall, dividing the brood and bees about equally on each side, and the queenless part supplied with a queen or a ripe queen-cell, thus making two colonies. Such colonies should winter well if supplied with sufficient stores, but will need more room early next spring.

When the bees rear a young queen to take the place of the old one, frequently they permit both the old and the young queens to work together for some time after the young queen begins to lay, but usually the old queen disappears after the honey flow, so it is not often that the two queens are wintered. It is possible under certain conditions even to have two or more young laying queens in one colony during the honey flow, but usually all but one disappear after the close of the honey flow.

Placing Combs Crosswise in the Hive.

Question.—If the bees build their combs crosswise in relation to the entrance in nature, why are hives built with the combs running lengthwise?

Ohio.

John Valley.

Answer.—In nature, bees build their combs in various directions in relation to the entrance, no special rule being followed. It has been suggested that the hive will be warmer in winter if the entrance is at the side of the combs instead of in the usual position at the ends. In the older literature this was designated as the warm way of placing the combs, while placing them with the ends toward the entrance was called the cold way. In actual practice this probably does not make much difference in the way

the bees winter. The hives are built with the entrance at the end of the combs in order that the floor of the hive can be tilted slightly forward to prevent water from running in. If the entrance were placed at the side, tilting the floor in this way would throw the combs out of plumb, making them difficult to handle.

Bees Fail to Work on Goldenrod.

Question.—Why is it that bees do not work on goldenrod in this locality? I read of beekeepers in other states obtaining honey from this source. Tennessee. W. A. Daniel.

Answer.—Like other honey plants, goldenrod does not secrete nectar everywhere it grows. Soil and climatic conditions have much to do with nectar secretion, each plant having its own peculiar requirements for best results in the amount of nectar. Goldenrod is reported as a good yielder in the New England states and as far south along the Atlantic Coast as Virginia, but in some localities it yields but little if any nectar. Again, some seasons are unfavorable for nectar secretion even when the flowers are thrifty and abundant, while other seasons are so favorable that, even though the flowers are not so abundant, they furnish large quantities of nectar. Where a recognized honey plant fails to yield year after year, it is probably because either the soil or the temperature is not entirely suitable.

Fall Treatment for American Foul Brood.

Question.—What should I do with colonies that have American foul brood late in the season when there will not be much honey for the bees to gather from now on? W. B. Statt. Illinois.

Answer.—If the colonies are badly infected so that not much of the brood matures, the best thing to do is to kill the bees with sulphur or gasoline and melt up the combs. If the colonies are but slightly infected, they can be treated, after brood-rearing has ceased in October, by shaking the bees into a clean hive containing combs of sealed honey. When this is done, the bees having no vacant cells in which to put any infected honey they may have in their honeysacs, they must consume it. This fall treatment usually results in a cure; but, if there are any vacant cells in the combs of honey, it is safer to shake the bees into an empty hive, leaving them about 24 hours before giving the combs of honey. To prevent swarming out in the meantime the hives can be carried into the cellar, or, if left outside, the queen should be caged to prevent absconding.

Moving Bees Short Distances.

Question.—When will be the best time to move bees from one slope of a hill to the other, a distance of about 100 yards? P. L. Conoway. Indiana.

Answer.—It will be well to wait until February before moving the bees this short distance, for, if they are moved when they have frequent flights, many of them will return to the old location and become lost. By waiting until they have been confined to their hives for some time, fewer bees will return to their old location. If it is neces-

sary to move the bees before winter you can do it by first moving them to another location several miles away, leaving them a week or two and then moving them back to the desired location. The bees having become accustomed to their surroundings in the distant location apparently forget their old surroundings, so that when they are brought back they can be located wherever desired. Of course, this plan works best when the bees can fly freely every day. If they were confined to their hives while at the distant location, the plan would not be successful.

Using Combs of Honey from Diseased Colonies.

Question.—In treating my colonies for American foul brood, I have several dozen frames containing honey but which have never had brood reared in them. Will these be safe to use again? If not, how can I treat them to render them safe? Montana. A. J. Fowlerton.

Answer.—To give these combs of honey back to the bees after treatment would result in a recurrence of the disease in practically every case, especially if the colonies which stored this honey were badly diseased. It should be remembered that American foul brood can be transmitted largely through honey from diseased colonies.

There is no method known for treating combs of honey from diseased colonies to render them safe. The only way you can safely give this honey back to the bees is to boil it in a closed vessel for about 30 minutes, placing the combs in water, allowing about five pints of water for each comb of honey. This honey after boiling can be fed to the bees next spring, but should not be fed for winter stores.

Wintering in Two Stories.

Question.—My bees are now in two-story ten-frame hives, the supers being practically full of honey, but there is hardly any honey in the brood-chambers. Will they winter this way (of course, being fully packed later on) or should I place the brood-chamber above the super of honey or crowd the bees into a single brood-chamber with four or five frames of honey? Ohio. Paul S. Nichols.

Answer.—The bees should winter well in the two stories with the honey above just as they arrange it themselves. Some beekeepers place the hive-body containing the honey below the brood-chamber for winter, which of course has the advantage that the bees then cluster in the warmest part of the hive, but there would be danger that the bees would use all the honey in the upper story during a spell of cold weather and starve because they could not go below for honey. As the honey is consumed in winter the cluster moves upward, the margin of the cluster enveloping some of the honey; so that, if the main supply of honey is placed below, the cluster would normally move away from it as stores are consumed. If the brood-chamber contains enough for winter, placing the chamber of honey below may work well in Ohio. Farther north, where the winters are more severe, it will be better to crowd the bees and honey into a single brood-chamber for winter.

THE Extension Service of Iowa State College has 100 demonstration apiaries scattered throughout the state. This season a campaign for "Better Queens" was put on in these demonstration apiaries. It is estimated that about 2,000 queens have been ordered this season by the Iowa State Beekeepers' Association and introduced by the extension specialists. This work is being done by Newman I. Lyle under the direction of Professor Paddock.

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The summer meeting of the South Dakota State Beekeepers' Association will be held at Scotland, South Dakota, August 28. This is a comparatively new association in the midst of the great sweet clover belt where large yields are secured year after year.

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Plans are being made for an extensive honey exhibit at the Mid-West Horticultural Exposition to be held at Council Bluffs, Iowa, November 13 to 18. Cash prizes are offered to the extent of nearly \$1,000, which will no doubt attract exhibitors from a large part of the country.

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George R. Vansell has been appointed by the University of California for the work in beekeeping at the University Farm, Davis, Cal.

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The Michigan Beekeepers' Association has just published a booklet containing information for its members. This booklet contains the name and address of each member of this association.

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A conference of the officials of the American Honey Producers' League was held at Green Bay, Wis., during the week of the Beekeepers' Chautauqua, August 7 to 11. Prof. H. F. Wilson, Madison, Wis., the newly elected president, Colin P. Campbell, Grand Rapids, Mich., the newly elected vice-president, and E. S. Miller, Valparaiso, Ind., member of the executive committee, were present.

* * *

The Ohio State Beekeepers' Association, together with the Tri-County Beekeepers' Association of western Ohio, will hold a field meet at Delphos, Ohio, September 13. This meeting is to be held in co-operation with the Tri-County fair, and arrangements have been made for a large honey exhibit. An extensive program has been arranged for the day. An advertisement for this meeting appears on page 609 of this issue.

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It is not often that college students can retain laboratory equipment which they used in college, but Professor Kelty, Instructor in



Beekeeping at the Michigan Agricultural College, has made arrangements whereby the students purchase their own equipment and take it with them to

establish themselves in beekeeping. Professor Kelty says that students take greater interest in their work because they own their own equipment.

* * *

The Ontario Beekeepers' Association will hold its 42nd annual convention at Toronto on December 6, 7 and 8. The directors have arranged for several special features that will no doubt attract a large attendance. There is to be a debate on the merits of the 10-frame Langstroth hive as compared with larger hives. Prominent beekeepers who have used both kinds of hives will debate this interesting and important question. An important business session is scheduled for the discussion of the handling of supplies and the sale of honey. Prizes are to be given in a frame-assembling competition, which will be open to any member.

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The University of Idaho has issued Circular No. 22, "Sweet Clover," by R. K. Bonnett and H. W. Hulbert, giving cultural methods, feeding value and value as a soil improver, that is of interest to beekeepers. It is published by the University of Idaho, Moscow, Idaho.

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The beekeepers' Chautauqua at Green Bay, Wis., Aug. 7-11, was well attended by wide-awake, enthusiastic beekeepers from all parts of the state. Prof. Wilson is already making plans for a great beekeepers' Chautauqua to be held at the University at Madison next year, at which time beekeepers from other states will be invited to attend. This will afford an opportunity to visit the Miller Memorial Library; and a pilgrimage to Marengo, Ill., is to be made at the close of the meeting to place a memorial plate in the church which Dr. C. C. Miller attended, the memorial plate being a tribute from the beekeepers of the entire beekeeping world.

* * *

The extension service of several of the states is mailing out to the beekeepers of the state form-letters on advice to beekeepers. The Michigan Agricultural College, East Lansing, Mich., has been keeping the beekeepers of Michigan posted on timely topics in this way for several years. The Massachusetts Agricultural College issued "Timely Topics for Beekeepers, No. 1" in July. The Massachusetts beekeepers who wish to receive this form-letter may no doubt do so by writing to Prof. N. E. Phillips, Massachusetts Agricultural College, Amherst, Mass.

LAST winter, while our good pastor was leading the Bible class in our Presbyterian church, he startled me by saying something like this:

"My good friends, whenever you get to living in close touch and communion with the Holy Spirit for a considerable time you may be sure that Satan will put in his best endeavors to get you off the track. It seems to me that, after I have been living close to God for even *one week*, I soon hear from the prince of darkness in some way or other."

The above startled me because I had been having a similar experience. I have told you before that Mrs. Root's sudden death had driven me to God's holy word, and that I had searched for the promises in a way I never did before in all my Christian life. Well, this keeping in close touch with the Holy Spirit brought its reward. I have already told you about having glimpses of the promise, "joy unspeakable and full of glory," such as I had never known before.* Just before our good pastor mentioned the above I had been for several days—yes, for a week or two—troubled because the Holy Spirit seemed for a time to have deserted me, or at least partly so. I had been holding fast to David's little prayer—"Let the words of my mouth and the meditation of my heart be acceptable in thy sight, O Lord, my strength and my redeemer," and, as I have told you before, I managed pretty well about my words and acts; but in some way the "meditation of my heart" had been going astray. Old temptations of years ago, that I had almost forgotten all about,

* In Gleanings for September, 1921, page 580, I told you about starting that Sunday school in that little town cursed with saloons and breweries. The work prospered until the little school-house would hardly hold the boys and girls who came from far and near. About this time Satan began to "sit up and take notice." I can imagine him saying to himself, "Whew! This thing must not be allowed to go on." And then he suggested to the manager of the brewery to offer the men and boys free beer during the whole hour the school was in session; and he succeeded, or did for at least one Sunday, in getting almost every man and boy away from the Sunday school. This incident illustrates the great truth our pastor spoke of, that when any work for the Lord Jesus Christ gets to making progress you may be sure the devil will take notice and be on hand and do his very best to block the way.

OUR HOMES

A. I. ROOT

Again, the devil taketh him up into an exceeding high mountain and sheweth him all the kingdoms of the world and the glory of them, and saith unto him, All these will I give thee if thou wilt fall down and worship me.—Matt. 4:8, 9.

And the serpent said unto the woman, Ye shall not surely die.—Gen. 3:4.

And no marvel; for Satan himself is transformed into an angel of light.—II. Cor. 11:14.

My grace is sufficient for thee.—II. Cor. 12:9.

Simon, Simon, behold, Satan hath desired to have you, that he may sift you as wheat; but I have prayed for thee, that thy faith fail not.—Luke 22:31, 32.

At the ninth hour Jesus cried with a loud voice, My God, my God, why hast thou forsaken me?—Mark 15:34.

was a sinner, and, to a certain extent, I have been a sinner every day of my life; but Christ Jesus (thank the Lord) came from his home in heaven to this earth to save sinners—just such sinners as I am and probably shall be to the day of my death.

Some of you may ask, "What about your emergency prayer—'Lord, help!'" Well, for some unknown reason that little prayer seemed to have lost its efficacy. Again and again I climbed above suggestions and temptations, but back they came trooping again. Before I knew it Satan seemed to be getting in his work. Down in my Florida home a great part of my time has been spent out in the open air alone by myself, where I can pray out loud—yes, and sing snatches of those precious hymns of promise. At one such time I stopped and said to myself something like this:

"Suppose that A. I. Root, who has been giving you these Home papers and quoting God's precious promises (and, I hope, leading many souls out of darkness and into the light)—suppose this old friend of yours, after he is 80 years old, should be tempted to do or say something that would upset the good work of nearly half a century?"

Well, one day when I was out riding in my electric auto, all alone on the road where I could pray out loud, I almost demanded of the Holy Spirit, or perhaps I might say of the dear Savior, why it was that I was thus pestered and followed up by Satan and his emissaries. What do you suppose happened? A quick response came, seeming almost like a distinct voice, "My grace is sufficient for thee." It gave me such cheer and encouragement that I almost shouted out loud. The dear Lord had been leading me through this experience in order that I might better *understand* how poor humanity, men and women, are tempted and led astray.

came trooping back. I think it was Satan who kept suggesting that I had *not* been "born again," and that it was only a notion of mine, that the dear Lord had "lifted me" from the "sinking sand," as we have it in that beautiful hymn, and that I was in real truth pretty much the same "old sinner" that I had been 40 or 50 years ago. I had to admit that this was, at least, partly true. I

And another thing, I went to searching my Bible, and found the words were spoken by the veteran soldier of the cross, Paul. He had his "thorn in the flesh," and God had honored me by giving *me, too*, a thorn in the flesh to keep me humble and to keep me on my guard. If you will read over the precious Psalms of David you will see how often David was tempted, and that these temptations are what brought out his wonderful prayers for help. And even the dear Savior himself when on the cross, when his multiplied sufferings were so great, gave voice to the words, "My God, my God, why hast thou forsaken me?"

In the fourth chapter of Matthew, after the temptation of Jesus in the wilderness, when Satan had shown him the kingdoms of the world he said, "All these things will I give thee if thou wilt fall down and worship me." The dear Savior consented to listen to him, but he finally replied, "Thou shalt worship the Lord thy God, and him only shalt thou serve." Well, during those times of conflict with Satan, I shall have to confess that several times I listened, with a sort of curiosity, to know (and see) what he really *had* to offer; and I shall have to confess that I have greater charity than I ever had before for those who deliberately decide to give up all hopes of heaven for the gilded suggestions of what Satan has to offer. He told Eve in the garden of Eden that, even if she *did* eat of the forbidden fruit, she would not *surely* die; and so he has been telling poor, infirm humanity ever since the world began. Let me digress a little right here.

I have been reading the dailies pretty carefully, or at least running them over hastily, to see that nothing escaped my notice, for the most of my life. Of late I scan the pages to see what progress the Anti-Saloon League is making in law enforcement in regard to prohibition. I have also been making a study of crime and criminals. In Bible times we are told of men—yes, and I am sorry to say women, too—who were "possessed of devils"; and I fear that even Christians have been inclined to *jest* about "demoniacal possession." I have wondered of late why some great man or woman, some minister of the gospel, or other friend of humanity, did not suggest or *had not* suggested that we are having demoniacal possession, *now*. You all know, I suppose, that there seems to be a growing fashion for some man to shoot his wife or sweetheart, and then turn the weapon on himself. Who but the devil would suggest to any man the killing of his wife before he kills himself? Yes, in some cases the "demoniac" kills all his children, or as many as he can, and then kills himself; and lovers shoot their sweethearts. I had been hoping that, with prohibition, this kind of work would let up. Perhaps it has let up somewhat, but a good many times a drunken man shoots his wife before he shoots himself, and a rejected suiter frequently shoots

the girl he says he loves. Sometimes he gives as a reason that he can not bear to see her married to anybody else. If there is such a thing as self or selfishness *boiled down*, this would seem to be the culmination of it. By the way, Satan's work is *always* selfish. He cares for nothing but to destroy and ruin everything that is good and pure on this earth.

There is still another form of demoniacal possession. A married woman—yes, perhaps the mother of several children—deliberately runs away with some man who is a devil in human form. Sometimes the woman later comes to her senses and begs piteously to have the poor, outraged husband receive her back. The children cry piteously for the dear mama who has been gone perhaps for weeks, or even months, and the mother's heart *yearns* "piteously" to be permitted to go back after she has shaken off her infatuation and freed herself from Satan's clutches. Shall the poor sin-scarred and crippled mother be permitted to go back to the wronged husband and to her children? I may say that I have been consulted in just such a matter, and decided that, if the poor woman is truly penitent, by all means let her come back.*

Just one more case of men who are possessed of devils. A poor man in the city of Cleveland came over to this country and worked for *six years* to get money enough to go back and get his wife and children. Before he started on his trip back he was so overjoyed with the thought of meeting his loved ones that he confided the matter to some of his friends. He drew his money out of the bank, and was ready for the trip. Two demons in human form waylaid him and demanded his money. He had waited so long, and had planned so carefully, that he was reluctant about giving it up. They pounded him almost to a jelly, and left him crippled for life, and took every cent of his hard earnings. I leave it to you to say if those two, devil-possessed, were not devils in human form. In olden times the only remedy we know of was "the Lamb of God who taketh away the sin of the world," who, by word of mouth, banished the devils wherever they had taken possession either of man or woman; and I am afraid that the only remedy clear up to this year of 1922 is the spreading of the gospel, which is equal to the task of banishing devils from the face of the *whole earth*.

* Years ago, when I was learning shorthand by myself from a book, exercises were given to test the pupil's ability to read shorthand with vowels omitted. No answer was given in the book to these exercises. The pupil was supposed to be able to work them out by himself. I had mastered them all but one, and on that one I worked not only days but for a week or more. When I got it, it was so impressed on my memory that I shall never forget it. It read like this:

Think gently of the erring;

You may not know the power

With which the dark temptation came

In some unguarded hour.

In closing let me urge upon you the importance of going to your Bible whenever you are worried or troubled, or undecided as to what is the proper thing for the follower of the Lord Jesus Christ to do. And you want a good reference Bible. When you find some passage that seems to hit the point in question, by means of the references hunt out everything in regard to the matter. Again and again have I almost shouted to find that God's holy word made it so very plain as to what course a Christian ought to pursue. It has been verily a "lamp to my feet and a light unto my path." And one more thing: Before you can expect the good Lord to answer your prayers, get rid of anything that God's holy word condemns. Sometimes in going over the ten commandments we shall find that some one of them hits the spot to a dot. And remember this: "If I regard iniquity in my heart the Lord will not hear me."

Portland Cement—Where Does it Come From? Also Something about Alpena, Michigan.

A few days ago Huber and I were called to Alpena, Mich., to attend a beekeepers' convention; but just *now* I am not going to talk about bees. When I first reached the city I was impressed with the lavish way in which the good people of that northern locality were using *cement*, not only for broad walks clear away out in the country, but for beautiful paved roads broad enough to prevent collision, and just where good hard roads were so much needed in the sandy regions of northern Michigan. By the way, this beautiful city is built almost entirely of fireproof structures, either cement or stone; and I do not think I ever saw so many huge plate-glass windows (with beautiful displays of merchandise) in any other city of its size or even twice the size of Alpena.

After the convention the beekeepers were carried in automobiles over the city and into the surrounding country, and I am now going to tell you of a sight that took a mighty hold on me. Alpena has one of the largest works for making Portland cement that are to be found in the United States, and maybe in the world. The automobiles rounded up by the side of what we might call an immense stone quarry. This quarry was, perhaps, a quarter of a mile across. The stone that makes the cement seems to be a sort of shale. It had been scooped out until it is now like a great wooden bowl; and down somewhere near the lowest part was a big shovel operated by steam; but instead of its being a real shovel it was a sort of scoop with sharp-tined blades or forks. This machine was taking up huge forkfuls of the broken shale and dumping it into little wooden cars. Now, there are a dozen or more of these little cars, all moving on railroad tracks that circle about the quarry in

different directions, *finally* coming to the surface and running up an incline so steep, it seemed to me like going upstairs. As fast as each little car was loaded it started off all alone by itself, circled about, gradually reaching the surface, then ran up the incline, dumped its load into a big freight car, and then went back empty after another load. The astonishing thing about this whole industry was that there was not a man in sight; and there was no evidence of any boss or any human being anywhere unless it was some one in that covered cab to operate the big steam shovel. These little rough-looking wooden cars went to and fro doing their work just as if they had intelligence. When a loaded car running up the incline saw an empty car coming toward it—or at least it looked to me as if it actually *saw* the car coming down—it stopped a minute until the empty one coming switched off on a side track; then after it got by, the empty one backed up and proceeded on its way, dodging other cars in a like manner so there was no collision, no dispute about the right of way, and no hitch in the work anywhere. It looked to me like a well-organized hive of bees. Of course I suppose there must have been somebody up near where the cars dumped, who kept an eye on things, and "pressed the button" in order to have everything move on just right. A friend near me suggested there was not even a man to "collect the fare and take up the tickets." I said at once, "Why can not our coal mines be worked on that plan and thus get our coal without any striking, as there is nobody to strike?" Somebody suggested that the operator on the tower might strike; but then, dear friends, we should have only one man to deal with instead of a *million* or more. Pretty soon I asked, "Why can we not in this way run our railways, trolley lines, and vessels on the great ocean, and *finally*, our *flying-machines*?"

Just while I was considering the matter today (Aug. 4), a circular was put into my hand from a great radio factory in Kansas City, Mo., from which I make the following extract:

"Radio transmits music through the air. It has guided warships without a soul on board through countless maneuvers at sea. It has brought pilotless airplanes from flying-fields safely through the clouds to other landings. It has guided driverless automobiles through crowded traffic."

While mentioning the above to a friend he said there is a coal mine somewhere in the South so near the surface that all they have to do is to scratch off a little top soil; and he said there is enough of it to keep doing exactly as these good people dig the rock for making cement.

"How are these little cars moved?" you may ask. Well, somebody said it is done by electricity, and that these tracks have a third rail to carry the current. Perhaps some friend who sees this in the region of

Alpena may explain the matter. When I first caught sight of this quarry I asked why it did not fill up with rain water, for there seemed to be no chance for an outlet. I was told that the loose rock or shale is so porous that it will not hold water. As fast as the rain comes down it goes out somewhere down through the bottom.

Now, what I have told you above suggests to me that electricity may possibly open up, or help to open up, a way to avoid strikes and disagreements between capital and labor. Perhaps the farmer may be enabled to do his work, or at least some of it, without the jangling and quarreling and selfishness that are just now, while I write, threatening to block the way of peace and good will both on land and sea.

Special Notices by A. I. Root

'Merrybanks and His Neighbor.'

The letter below explains itself:

"Dear Friend in Christ:

"Some years ago we purchased from you a little book entitled, 'Merrybanks and His Neighbor.' Our copy has been worn out by constant use and lending it to neighbors' boys. I would like to know if you still have the book on sale, and the present-day price of it. Enclosed find stamped envelop for reply.

"Wishing you continued years of Christian joy in God's Name, I am,

"Yours sincerely,

"J. M. Willoughby.

"363 S. Main St., Elmira, N. Y."

I find we have quite a number of these books in stock, and I do not think they have been advertised or offered for sale for several years—perhaps through some oversight. It is a little book of 210 pages in regard to bee culture, poultry, gardening, etc., by your old friend, A. I. Root. The old-time price of the book was 25 cents and 3 cents additional for postage. While they last, any of our readers may have one for 15 cents prepaid; and I hope that, when you get one, you will lend it to the boys in your neighborhood in the way our good friend who writes the above letter has been doing. It may be the means of sowing good seed that will bear fruit of still more importance than bees, chickens, gardens, or anything else.

Nitrate of Lime for Sweet Clover.

By the way, during the winter a firm in New York City advertised a free package of Norwegian nitrate of lime. They said the nitrogen was taken from the air over in Norway, and the electricity used for the purpose was produced by means of windmills and waterfalls. A generous sample by mail was sent free of charge, and it seemed to hit the Hubam clover just right. A teaspoonful of it was worked in the soil with some Hubam that was about a foot high. It turned it to a rich dark green and sent it away up above the rest. A big wind, however, blew it down flat; but, not at all discouraged, the tips turned and started up again, and soon got up a foot or over above the other. I afterward purchased a barrel of about 200 pounds for \$5.00, and this I sprinkled over my potato ground where I had planted Velvet beans. Our good friend Henry Ford is planning to get nitrogen from the great waterfalls at Muscle Shoals, Alabama. The Norwegian nitrate of lime acts very much like the nitrate of soda already on the market; but my impression at present is that it is a little more effective, and perhaps a little cheaper.

Poultry and the "Chicken Business."

My good friends, I hardly need tell you that I have been more or less in touch with chickens for, I might say, 80 years; and just now in the pres-

ent year of 1922 we have a new poultry book by Prof. Richardson, of the College of Agriculture, New Hampshire. The book has 152 pages, and discusses in an up-to-date manner almost everything concerning the poultry business. Now, to do the above, and confine itself to 152 pages of good-sized type, of course each department must be pretty well boiled down, and this is what I like about the work. As an illustration, the matter of electric lighting in order to get the eggs when they bring a big price is gone over briefly, and I quite agree with the editor in saying that where chickens are kept by the hundreds and thousands the owner had better have one of the up-to-date little electric light plants. This would not only furnish the light but pump the water, grind feed and do a lot of things. I do not know but an electric windmill might come in play nicely.

In regard to that bugbear, white diarrhea with day-old chicks, the author suggests that prevention is better than cure, and everything else seems to be managed in an up-to-date way. The matter of culling to get out the "drones" is also very nicely handled. Price \$1.50. Address Harper & Brothers, New York.

"Kind Words."

My dear Mr. Root:

I can call you a dear old friend; but, only because I never saw you personally, having known you only through correspondence for over 40 years, I content myself simply with the greeting, "My dear Mr. Root."

My Gleanings lapsed last fall, after a subscription for 40 years, and I failed to renew until last April. Now in the present number (for June I mean) I have my first knowledge of Mrs. Root's decease.

Although it seems to come at a late date, I trust you will feel that my sympathies are none the less sincere, and, indeed, most heartfelt. Many references have you made to her in your articles in Gleanings, and these, added to our knowledge of the kind of sons and daughters you mutually raised in the God-fearing way, make it certain to all of us familiar with her characteristics through your writings in the Home department of Gleanings that she was a splendidly good, consecrated woman who must have helped to inspire much that you have often tenderly endeavored to put into words, to do people good.

My wife was touched by your references to her in this July Gleanings; and, turning to me, said:

"Poor Mr. Root! I feel very sorry for him, for he must, after all the experiences of that long life together, feel lonely, though I think not sad, for he thinks and speaks as a Christian should about temporal partings and eternal reunions. His article is beautiful, and I hope you can say as much for me if I am taken first."

And I told her I could.

Dear Mr. Root, you have some things to be grateful for. First, that the good and caring God has spared you both to a good old age together in a happy and useful life. Second, she was spared long and painful illness, and you a long anxiety and ministry because of protracted suffering on her part. Third, she having been a devoted Christian, you are now absolutely certain of her salvation, and happiness among the heavenly hosts, and she certainly awaits your coming into the great number in glory. Fourth, you now have one more of your very own, the veriest one to you on earth, to represent you and yours in that heavenly land. There is verity in all these. Be comforted in the surety that so many bear you company in the solace of them. And try to think how many friends you both have had, and how so many of them yet living are sympathizing with you and bearing you and yours on their hearts.

That you may have many wonderful comforts that the rest of us naturally can not share, and be kept in mysterious but sure daily peace, with a firm hold upon all eternal verities, and still live in faithful loyalty to your beloved, and to her and your God and Savior, is my prayer.

Yours most sincerely, T. Chalmers Potter.

146 E. Ashland St., Doylestown, Pa., July 13, 1922.

Classified Advertisements

Notices will be inserted in these classified columns for 50c per line. Advertisements intended for this department cannot be less than two lines, and you must say you want your advertisement in the classified column, or we will not be responsible for errors. For special conditions on bee and queen advertising, please write us. Copy should be received by 15th of preceding month to insure insertion.

REGULAR ADVERTISERS DISCONTINUED IN GOOD STANDING.

(Temporary advertisers and advertisers of small lots, when discontinued, are not here listed. It is only regular advertisers of regular lines who are here listed when their advertisements are discontinued when they are in good standing.)

Marugg Company, J. D. Harrah, Curd Walker, V. R. Thagard, Charles Stewart, W. C. Smith & Co., F. M. Russell, Arlie Pritchard, A. J. Pinard, H. Peterman, Norman Bros., Murry & Brown, E. E. Mott, F. M. Morgan, Moore & Peirce, James McKee, Fred Leininger & Son, Sam Hinshaw, J. D. Kroha, R. B. Grout, W. J. Forehand & Sons, L. L. Forehand, E. F. Day, J. M. Cutts & Son, A. E. Crandall, Geo. A. Coleman, Buckeye Bee Co., C. J. Baldrige.

HONEY AND WAX FOR SALE.

FOR SALE—White comb honey, mostly clover, in carriers. I. J. Stringham, Glen Cove, N. Y.

FOR SALE—White clover honey in 60-lb. cans—none finer. J. F. Moore, Tiffin, Ohio.

FOR SALE—White sweet clover in cases, two 60-lb. cans, 10c per lb., f. o. b. Joe C. Weaver, Cochrane, Ala.

FOR SALE—25 tons fine extracted white clover honey at 12c. Comb honey prices on request. Dr. E. Kohn & Son, Grover Hill, Ohio.

FOR SALE—Clover honey, new crop, new cans. 1 60-lb. can, \$8.10; 2 60-lb. cans, \$15.60. Granulated. ½c pound less. John J. Lewis, Lyons, N. Y.

FOR SALE—White, amber and buckwheat honey in new 60-lb. cans and 5 and 10 lb. pails. H. B. Gable, Romulus, R. D. No. 2, N. Y.

FOR SALE—White, amber and buckwheat honey, in 60-lb. cans and 5 and 10 lb. pails. Write for prices. E. L. Lane, Trumansburg, N. Y.

WRITE for prices on a case or carload of new clover honey. C. S. Engle, 1327 23rd St., Sioux City, Iowa.

FOR SALE—New white clover honey of the finest quality in 60-lb. cans and 5-lb. pails. Sample. 20c. A. S. Tedman, Weston, Mich.

FOR SALE—Choice clover extracted honey, packed in new 60-lb. cans. Write for prices, stating quantity desired. J. D. Beals, Oto, Iowa.

FOR SALE—12,000 lbs. of choice white clover honey, well ripened, put up in new 5 and 10 lb. pails. Sample 25c. W. B. Wallin, Brooksville, Ky.

FOR SALE—Finest quality white clover extracted honey in new 60-lb. cans, 2 cans in case, \$14.40 for case f. o. b. Sample, 10c. Alice Burrows, Oran, N. Y.

FOR SALE—Very best clover-basswood honey. Produced in new combs. Packed in new containers. 60-lb. cans and 5-lb. pails. Sample, 20c. Write for prices. A. C. Ames, Weston, Ohio.

FOR SALE—Extracted white clover honey. 1922 crop, new tins, two 60-lb. cans to case, at \$15.00 per case. J. G. Burtis, Marietta, N. Y.

FOR SALE—Choice white clover honey in new 60-lb. cans, 120 lbs. net, \$15.00. Sample, 20 cents. Edw. A. Winkler, R. D. No. 1, Joliet, Ill.

FOR SALE—Choice new clover extracted honey put up in new 60-lb. cans. Write for prices, stating quantity desired. W. M. Peacock, Mapleton, Iowa.

FOR SALE—White honey in 60-lb. cans, also West Indian in 50-gal. barrels. Samples and price on request. A. I. Root Co., 23 Leonard St., New York City.

FOR SALE—White clover honey in 60-lb. cans and 5-lb. pails, this year's crop, none better. Write for prices. Sample, 10c. F. W. Summerfield, Waterville, Ohio.

FOR SALE—50,000 lbs. extra fancy white clover honey. Price, one 60-lb. can, 16c a lb.; two 60-lb. cans, 15c a lb. Sample bottle by mail, 10c. J. M. Gingerich, Kalona, Iowa.

HONEY FOR SALE—In 60-lb. tins, water-white orange, 15c; white sage, 14c; extra L. A. sage, 12c; buckwheat, 10c, etc. Hoffman & Hauck, Woodhaven, N. Y.

FOR SALE—Clover honey in new 60-lb. cans, 2 cans to the case, at 12c per lb. Buckwheat honey in barrels, 150 lbs. each, at 10c per lb. Sample, 10c. R. V. Cox, Sloansville, N. Y.

MY new crop of comb and extracted honey, unexcelled for quality. Prompt service and satisfaction guaranteed. Sample, 15c, to apply on first order. O. W. Bedell, Earlville, N. Y.

RASPBERRY HONEY—In 60-lb. cans, 2 in a case for \$14.40; one in a case, \$7.50. Sample by mail, 20c, which may be applied on order for honey. Elmer Hutchinson & Son, Lake City, Mich.

FOR SALE—Clover and amber honey in new 60-lb. cans, 2 in a case, new crop; also 9 cases amber honey 1921 crop, sample and prices on request. H. A. Meyer, West Point, R. D. No. 3, Nebr.

FOR SALE—No. 1 white comb honey, \$6 per case of 24 sections, six or eight cases to carrier, light and dark amber extracted in 60-lb. cans, 10c per lb.; amber baker's honey in 50-gal. barrels, 8c per lb. H. G. Quirin, Bellevue, Ohio.

FOR SALE—A1 diamond clear sweet clover extracted honey, in 60-lb. cans, 10½c per lb.; in 5 and 10 lb. friction-top pails, 15c per lb. This honey is guaranteed to be equal to any honey in U. S. in body, color and flavor. Virgil Weaver, Box 311, Moville, Iowa.

CLA-FO-NY Quality (liquid or crystal) honey, the result of 18 years' experience in honey production, is thoroughly ripened by the bees, free from wax or pollen. Prices: clover, case of 2 60-lb. cans, \$16; case of 15 5-lb. pails, \$12.75. Buckwheat, 2 60's, \$10.80; 15 5's, \$9.75. Sample, 20c. In 5-case lots, 5% off. Buckwheat suitable for baking. 2 60's to case, \$6. Clarence Foote, Delanson, N. Y.

FOR SALE—We can supply honey to keepers or other roadside sellers who may need to buy beyond their own supply, packed as follows: 2½-lb. friction top tin cans, 2 dozen in case; 5-lb. friction top tin cans, 1 dozen in case; 10-lb. friction top tin cans, ½ doz. in case; 60-lb. square cans, 1 to case; 60-lb. square cans, 2 to case. We have the following kinds of honey: Standard white, alfalfa, sweet clover, California sage, California orange, light amber, amber. Write for prices. The A. I. Root Co., Medina, Ohio.

OUR 1922 crop extracted honey is a very fancy grade, water white clover, which was left on the hives until thoroughly cured by the bees before extracting, making it very heavy bodied. This thick, rich honey is all packed in new 60-lb. cans, two to the case. Of course, we have to ask a little more for honey of this quality than ordinary honey. When in need of a good article, send a dime for a sample, and address your inquiry to D. R. Townsend, Northstar, Mich.

FOR SALE—Our 1922 crop of white clover extracted honey, put up in new 60-lb. cans and cases. Stored by the bees in nice new white combs, above excluders. The entire crop left upon the hives until some time after the close of the clover flow. By buying our honey you get our 47 years' experience in the production of honey. You may be able to buy cheaper honey, but what about quality? We are offering our new crop clover extracted honey as long as it lasts at the following prices: One to five cases at 14c per pound, 5 cases or more, 13c per pound, on track here at Northstar. Address, with remittance, E. D. Townsend & Sons, Northstar, Michigan.

HONEY AND WAX WANTED.

WANTED—Honey, section, bulk comb and extracted. Elton Warner, Asheville, N. C.

WANTED—Good table honey. Send sample and tell me your price. W. W. Crim, Pekin, Ind.

WANTED—Bulk comb and section honey. Correspondence solicited. J. E. Harris, Morristown, Tenn.

WANTED—Honey in ton lots, comb and extracted of all kinds. Joe Mlinarits, 8927 Keller St., Detroit, Mich.

BEE SWAX WANTED—For manufacture into SUPERIOR FOUNDATION. (Weed Process.) Superior Honey Co., Ogden, Utah.

WANTED—Comb and extracted honey, carload and less. All kinds of honey and beeswax for sale. Walter C. Morris, 105 Hudson St., New York.

WANTED—Shipments of old combs and cappings for rendering. We pay the highest cash and trade prices, charging but 5c a pound for wax rendered. The Fred W. Muth Co., Pearl and Walnut Sts., Cincinnati, Ohio.

WANTED—Beeswax. We are paying 1c and 2c extra for choice yellow beeswax and in exchange for supplies we can offer a still better price. Be sure your shipment bears your name and address so we can identify it immediately upon arrival, and make prompt remittance. The A. I. Root Co., Medina, Ohio.

FOR SALE.

HONEY LABELS—New design. Catalog free. Eastern Label Co., Clintonville, Conn.

FOR SALE—Power circular rip and crosscut saw; 4 saws, \$35.00. Clarence Foote, Delanson, N. Y.

FOR SALE—A new two-frame reversible No. 17 extractor. Write for price. H. Tebbe, Dow City, Iowa.

WORTH \$\$\$ to you. Make your own frames. Save one-half. Non-sag thin top-bar. New feature. Sample, 10c. D. S. Hall, Marshfield, Vt.

FOR SALE—Good second-hand 60-lb. cans, two cans to case, boxed, at 60c per case, f. o. b. Cincinnati. Terms cash. C. H. W. Weber & Co., Cincinnati, Ohio.

HONEY cans and pails; new sixties, 50 cases at 91c per case two cans. The Stover Apiaries, Mayhew, Miss.

FOR SALE—Five Townsend uncapping tanks. Price, complete, \$27.50 each. The A. I. Root Co., Medina, Ohio.

FOR SALE—"SUPERIOR" FOUNDATION, "quality unexcelled." Let us prove it. Order now. Superior Honey Co., Ogden, Utah.

PORTER BEE-ESCAPES save honey, time and money. For sale by all dealers in bee supplies. R. & E. C. Porter, Lewiston, Ill.

SEND for our bargain list of new bee supplies, hives, frames, bottoms, covers, sections, shipping cases, almost everything you want. Some at 50% discount. The Stover Apiaries, Mayhew, Miss.

FOR SALE—210 hives of bees, about 600 supers, ton truck, extractor, everything for running for extracted and comb honey, \$900 worth extra new material, price \$3500. Death of husband cause for selling. For full particulars, write Mrs. Viola C. McAlpine, Busy Bee Farm, Boliger, Ala.

FOR SALE—3-horse steam boiler. \$40.00. 4-horse steam engine. \$45.00; galvanized round tank, 7 barrels, \$7.00; 800-lb. round tin honey tank, large faucet, \$7.00; cider mill and press, \$7.00; new pump jack, \$6.00; Williams pump, \$6.00; double-acting force pump, solid brass cylinders, \$12.00. J. W. Utter, Amity, Orange Co., N. Y.

WANTS AND EXCHANGE.

WANTED—A good two-frame honey extractor. P. B. Brown, Grantsburg, Wis.

WANTED—Maple sugar. Quote price and state how put up. Andrew M. Seibert, Intervilla, Pa.

WANTED—Old combs and cappings for rendering on shares. Our steam equipment secures all the wax. Superior Honey Co., Ogden, Utah.

OLIVER typewriter, \$65.00. Will exchange for honey extractor or eight-frame beehives for equal value. W. H. Ruel, 3024 Lycastrate Ave., Detroit, Mich.

BEE SWAX wanted. Old combs (dry) and cappings for rendering. Also wax accepted in trade. Top market prices offered. A. I. Root Co. of Iowa. Council Bluffs, Iowa.

WANTED—White clover extracted honey in exchange for 100 new 10-frame full-depth supers with L. frames, nailed, but not painted. Lewis goods. Best offer by September 10 takes. John C. Bull, Valparaiso, Ind.

OLD COMBS, cappings or slumgum wanted for rendering by steam press process. We pay cash for wax rendered, trade for supplies, or work it into foundation. W. T. Falconer Mfg. Co., Falconer, N. Y.

BEE SWAX WANTED—We need large quantities of beeswax and are paying good prices now. Ship to us at Hamilton, Ill., or Keokuk, Iowa, or drop us a card and we will quote f. o. b. here or f. o. b. your own station, as you may desire. Dadant & Sons, Hamilton, Ill.

OLD COMBS WANTED—Our steam wax-presses will get every ounce of beeswax out of old combs, cappings or slumgum. Send for our terms and our 1922 catalog. We will buy your share of the wax for cash or will work it into foundation for you. Dadant & Sons, Hamilton, Ill.

EXCHANGE—A fine 12-gauge Stevens repeater shotgun for Al coon hound with trial. Fred Fisher, 3 Elmendorf St., Albany, N. Y.

WANTED—The New York Agricultural Experiment Station desires to purchase the following numbers of Gleanings in Bee Culture to complete its files: Vol. 23 (1895), Nos. 1 to 4, incl.; Vol. 33 (1905), index; Vol. 35 (1907), No. 8; Vol. 36 (1908), No. 7 and index; Vol. 44 (1916), No. 12; Vol. 46 (1918), No. 5; Vol. 49 (1921), No. 3. Address all communications to the Librarian, New York Agricultural Experiment Station, Geneva, N. Y.

BEES AND QUEENS.

HARDY Italian queens, \$1.00 each. W. G. Lauver, Middletown, Pa.

BEES for sale, honey and contents. J. W. Elliott, R. D. No. 6, Shelby, Ohio.

WHEN it's **GOLDEN**, it's **PHELPS**. C. W. Phelps & Son, Binghamton, N. Y.

FOR SALE—Italian queens, nuclei and packages. B. F. Kindig, E. Lansing, Mich.

REQUEEN with **SIMMONS' QUEENS**. Prices reduced. Fairmount Apiary, Livingston, N. Y.

SPECIAL prices on queens. See my ad page 619. Frank Bornhoffer, Mt. Washington, Ohio.

FOR SALE—200 colonies, 4 locations, 4 main crops, \$1250. R. H. Yearnshaw, Maxwell, Calif.

TRY ACHORD'S BEES AND QUEENS. Price list by return mail. W. D. Achord, Fitzpatrick, Ala.

AM now ready to send queens by return mail. Dr. Miller's strain. \$1.00 each. S. G. Crocker, Jr., Roland Park, Baltimore, Md.

3-BANDED ITALIAN QUEENS. Untested. 90c each; tested, \$1.40 each; satisfaction and no disease guaranteed. J. J. Scott, Crowville, La.

PHELPS GOLDEN QUEENS will please you Mated, \$2.00; 6, \$10.00; or \$18.00 a doz. C. W. Phelps & Son, Binghamton, N. Y.

TWO-POUND package bees with untested Italian queen. \$5.00; 3 lbs., \$7.00. Safe delivery guaranteed. C. H. Cobb, Belleville, Ark.

FOR SALE—Bright Italian queens, 1, \$1.00; 12, \$10.00; 100, \$75.00. Safe arrival guaranteed. T. J. Talley, Greenville, R. D. No. 3, Ala.

FOR SALE—July 1, Buck Goldens. 1 queen. \$1.00; 6 queens. \$5.00; 12 queens, \$10.00; virgins, 40c. W. W. Talley, R. D. No. 4, Greenville, Ala.

FOR SALE—50 colonies of bees in good condition. Movable frames, part on full sheets. Ten-frame, used hives. Write Roy Killin, Pine Village, Ind.

FOR SALE—Early package bees, nuclei and queens. We handle 1800 colonies. Shipping season March 1 to June 1. Loveitt Honey Co., Phoenix, Ariz.

GOLDEN Italian queens for sale. One queen, 90c; 6 queens, \$5.00; 12, \$9.00; 100, \$65.00. Safe arrival and satisfaction guaranteed. J. F. Rogers, Rt. 3, Greenville, Ala.

FOR SALE—150 colonies Italian bees. No disease. Good breeding. Entire equipment for extracted-honey production. 10-frame hives. Wired combs in Hoffman frames. Everything first class. S. D. Clark, Bayfield, Wis.

"SHE-SUITS-ME" queens, line-bred Italians, \$1.50 each; 10 to 24, \$1.30 each. See back cover of January number. Allen Latham, Norwichtown, Conn.

ELTON WARNER'S QUALITY QUEENS—Progeny of his famous Porto Rican breeding stock. Write for price list. Elton Warner Apiaries, Asheville, N. C.

QUEENS—For summer and fall. Write for prices and guarantee, state quantity desired and when shipment wanted. I can fill your orders. J. L. St. Romain, Hamburg, La.

WE ARE booking orders now for spring delivery for the famous "Colorado Queens." Send your order early so as to be sure to get your queens. C. I. Goodrich, Wheatridge, Colo.

FOR SALE—Three-band Italian queens, select untested, \$1.00 each; \$9.00 per doz. 2-lb. package with queen, \$5.00. Satisfaction guaranteed. W. T. Perdue & Sons, Fort Deposit, Ala.

BEES BY THE POUND — Also **QUEENS**. Booking orders now. **FREE** circulars, giving details. See larger ad elsewhere. Nueces County Apiaries, Calallen, Texas. E. B. Ault, Prop.

BIG SAVINGS on select three-banded Italian queens, gentle, prolific and hustlers. Second to none. One, 85c; 6 for \$4.25; 12, \$8.00. Ship all orders within 24 hours. J. L. Morgan, Gen. Mgr. Tupelo Honey Co., Columbia, Ala.

TRY MY CAUCASIAN OR ITALIAN three-frame nuclei at \$5.00 each, with untested queen. Tested, \$1.50; untested, \$1.00, of either kind. No disease. Peter Schaffhauser, Havelock, N. Car.

GOLDEN QUEENS that produce large beautiful bees, solid yellow to tip, very gentle and prolific. Untested, \$1.25 each; select tested, \$3.00 each; breeders, tested, \$5.00. Dr. White Bee Co., Sandia, Texas.

FOR SALE—Leather-colored Italian queens, tested, until June 1, \$2.50, after \$2.00. Untested, \$1.25; 12, \$13.00. **ROOT'S GOODS, ROOT'S PRICES**. A. W. Yates, 15 Chapman St., Hartford, Conn.

WARRANTED PURE-MATED Italian queens in special sure introducing cages; first order, \$1.25 each. 30 years' experience in queen-rearing. No honey in queen candy. Daniel Danielson, Brush, Colo.

COLORADO HEADQUARTERS FOR QUEENS—Northern-bred leather-colored three-band Italians. Safe arrival guaranteed. Send for circular and price list. Loveland Honey & Mercantile Co., Loveland, Colo.

IF GOOD bright Italian queens are wanted by return mail, send your order to M. Bates, Greenville, Ala. Price, \$1.00 each; \$10.00 per dozen; \$75 per 100. Pure mating, safe arrival and satisfaction guaranteed.

FOR SALE—Golden Italian queens, untested. \$1.00; 6 for \$5.40; 12 or more, 80c each; tested, \$1.40 each. Good honey-gatherers, hardy and gentle. No disease. Safe arrival. Hazel V. Bonkemeyer, Randleman, R. D. No. 2, N. C.

BRIGHT ITALIAN QUEENS, \$1.00 each, 10% less in dozen lots. Pure mating, safe arrival and reasonable satisfaction guaranteed in U. S. and Canada. Write us for prices on package bees. We have them in season. Graydon Bros., Rt. 4, Greenville, Ala.

SPICER'S three-band Italian queens by return mail. If you are interested in improving your stock and getting larger returns from your bees, head your colonies with these queens. Untested, \$1.00; 6, \$5.50; 12, \$10.00; tested, \$2.00 each. Robt. B. Spicer, Wharton, N. J.

PACKAGE BEES—\$1.50 per pound. Untested Italian or Carniolan queens, \$1.25 each. Circular free. J. E. Wing, 155 Schiele Ave., San Jose, Calif.

FOR SALE—Golden Italian queens, 1 untested, \$1.00; 6 for \$5.00; tested, \$2.00; hybrids, 3 for \$1.00. J. F. Michael, Winchester, R. D. No. 1, Ind.

QUEENS—Golden or three-banded Italians of highest quality. Every one guaranteed or your money back, 75c each; 6, \$4.00; 12, \$8.00. G. H. Merrill, R. D. No. 5, Greenville, S. C.

FOR SALE—Three-banded Italian queens, untested, \$1.50 each; 6, \$8.00. Ready now. Satisfaction guaranteed. Chas. W. Zweily, Willow Springs, Ill.

POOLE'S three-banded Italian queens are guaranteed to arrive safely and give satisfaction. Untested, 80c each; 25 or more, 75c; tested, \$2.00. Rufus Poole, Greenville, Ala.

JENSEN'S queens may not be as cheap in price as some; but at the price we offer them they have few competitors, quality considered. Untested, 75c. Select untested, 90c. Jensen's Apiaries, R. D. No. 3, Crawford, Miss.

HEAD your colonies with Williams' Italian queens of quality and get more pleasure and profit from your bees. They produce bees that are gentle, hardy and hustling. Descriptive circular free. Select untested, 75c each. P. M. Williams, Ft. Deposit, Ala.

SPECIAL REDUCED PRICES on Italian queens for August and September. Untested, 1, \$1.00; 6, \$5.75; 12, \$11.00; 50, \$45.00; 100, \$85.00. Tested, 1, \$2.00; 6, \$11.00. The place where you get the best. J. D. Harrah, R. F. D., No. 1, Free-water, Oregon.

FOR SALE—60 colonies of bees, 100 supers, extractor tank, queen-excluders and complete outfit for extracted honey. Good location, building and lots, and retail honey trade. Reason for selling, poor health. Write for particulars. P. B. Ramer, Harmony, Minn.

TESTED QUEENS—One-year-old tested three-banded Italian queens, descended from the famous Moore strain. Were reared in full colonies and are very fine queens. Price, \$1.50 each; 6 for \$8.50; 12 for \$16.00. Safe arrival and satisfaction guaranteed. Elmer Hutchinson & Son, Lake City, Mich.

FOR SALE—DEPENDABLE GOLDEN ITALIAN QUEENS add beauty to your bee quality. Virgins, 60c; 5 for \$2.50; untested, \$1.00; 6 for \$5.00; select untested, \$1.50; 6 for \$6.50; tested, \$2.50; 5 for \$10.00; selected, \$3.00; breeders, \$5.00. Safe arrival and quality guaranteed. S. H. Hailer, Pinson, Tenn.

BALANCE of season we will furnish a 2-lb. package of our three-banded hustlers with a select untested queen for \$4.75; 25 or more, \$4.50 each. Select untested queens from our best breeders, \$1.00 each; \$10.00 per doz. Tested, \$1.50 each; \$15.00 per doz. Caney Valley Apiaries, J. D. Yancey, Mgr., Bay City, Texas.

GOLDEN ITALIAN QUEENS—Bred from finest strain in U. S. Mated to select drones. THEY POSSESS THE QUALITIES WHICH MAKE BEEKEEPING PROFITABLE. Untested, 75c; dozen, \$7.50; virgins, 25c; tested, \$1.50. Safe arrival and satisfaction guaranteed. Orenshaw County Apiary, Rutledge, Ala.

ITALIAN QUEENS—Three-banded, select untested, guaranteed. Queen and drone mothers are chosen from colonies noted for honey production, hardiness, prolificness, gentleness and perfect markings. Price, \$1.25 each, 12, \$1.00 each. Special prices on larger orders. Send for circulars. J. H. Haughey Co., Berrien Springs, Mich.

FOR SALE—Golden Italian queens—good queens at low price. Untested, \$1.00; 6 for \$5.40; 12 or more, 80c each; tested, \$1.50 each; select tested, \$2.50 each. No disease of any kind. Bees very gentle and good honey-gatherers, not apt to swarm unless crowded for room. 18 years a queen-breeder. D. T. Gaster, Randleman, R. D. No. 2, N. C.

PHELPS' GOLDEN ITALIAN QUEENS combine the qualities you want. They are GREAT HONEY-GATHERERS, BEAUTIFUL and GENTLE. Virgins, \$1.00; mated, \$2.00; 6 for \$10.00, or \$18.00 per doz.; tested, \$5.00. Breeders, \$10.00 to \$20. Safe arrival guaranteed only in the U. S. and Canada. C. W. Phelps & Son, Binghamton, N. Y.

FOR SALE—1000 colonies bees, 10-frame Langstroth hives, fully equipped for comb and extracted honey, auto truck, big warehouse, located at Laurel, Montana, one of the best honey-producing sections in Montana; \$7.50 per colony, with or without locations. Weber Brothers Honey Co., Blackfoot, Idaho.

HOLLOPETER'S ITALIAN QUEENS are bred up to a standard and not down to a price, yet price is low where quality and service count. Select untested each, \$1.25; 6, \$7.00; 12, \$13.00; 25, \$25.00. Write for mailing date and price on larger lots for requeening. Pure mating, no disease, safe arrival and satisfaction guaranteed. J. B. Hollopeter, Rockton, Pa.

LAST fall I had selected and tested six queens. Will use them as breeders this season in my queen yard. Their surplus honey capacity is from 216 lbs. to 288 lbs. each. I guarantee that every queen bought of me in 1922 is to be the daughter of one of these queens. Bees are three-banded. Mated, in June, \$1.25 each; 6, \$7.00; 12, \$13.50; 25 or more, \$1.00 each. After July 1, \$1.00 each straight. Julius Victor, Martinsville, N. Y.

On account of old age, I will sell 350 colonies of bees, with or without locations. These bees are equipped with 300 extracting supers with combs built on wired foundation and 500 comb-honey supers. They produced last year 23 tons of extracted and comb honey and will do as well or better this year. Price, \$2200. Terms, one-half cash, balance in one year with bees as security. M. A. Gill, Hyrum, Box 26, Utah.

FOR SALE—250 to 350 colonies of fine Italian bees on good straight L combs with a full equipment of supplies for extracted-honey production. Also 47 acres land in Harrison County, Iowa, near town; has about 20 acres fine natural basswood grove. Has good improvements, especially for beekeeping. Probably as good an equipment as there is in the state. This is a good paying business, with outyards already established, everything complete. Can give long time on part of the price, but would require \$8000 or \$9000 to swing it. Any one having that much capital to invest in a dandy country home and a paying business, will find it by addressing E. S. Miles & Son, Dunlap, Iowa.

BEES FOR SALE in lots of one colony up to 100 or more, as desired, or a series of outyards, including small house in town, 32-foot honey-house, 8-frame power extractor, engine, sawtable, 150 new hives in K. D. Ford auto, and various other items required in this line of business. Past 19 years I've produced upwards of 75 tons of honey in this locality. If whole outfit is wanted it can be bought as a going concern, by paying 25% down, and balance remain one, three or five years at 7% with acceptable backing of notes. Cause for selling, doctor's insistence, age, ill health, and laziness on my part. Correspondence solicited. A. W. Smith, Birmingham, Mich.

MISCELLANEOUS.

FOR SALE—Golden seal seed. S. Pitts, Stronghurst, Ills.

THE BEE WORLD.—The leading bee journal in Britain, and the only international bee review in existence. It is read, re-read and treasured. Will it not appeal to you? Specimen copy free from the publishers, The Apis Club, Benson, Oxon, England. Send us a post card today. It is well worth your little trouble.

MEDICINAL roots and herbs are very profitable to grow. We especially recommend growing Golden Seal which with good care will yield as high as \$10,000 per acre for each crop. It takes several years to mature but will average \$1000 a year. Special Crops, a monthly paper, tells how. Sample copy, 10c. \$1.00 per year. Address Special Crops Pub. Co., Box "G," Skaneateles, N. Y.

TOO LATE TO CLASSIFY.

WANTED—Partner in farming and beekeeping. C. E. Watts, Meredith, N. H.

FOR SALE—Finest quality clover honey in 60-lb. cans, 2 to a case, at \$15 a case, also in 5-lb. pails, \$1 each, all f. o. b. here. Sample 10c. Write me. Edw. A. Reddout, New Woodstock, N. Y.

FOR SALE—On account of the death of the owner, 400 colonies of bees with surplus equipment for about 300 more, located in Central Texas where there is a good honey flow almost the entire year. Plenty of room for expansion. Address Mrs. T. N. Bemus, 116 E. Dewey Place, San Antonio, Texas.

PATENTS --- TRADEMARKS

I offer prompt, personal and expert professional service. 10 years' experience. Write for terms. **LESTER SARGENT**, Patent Attorney, 524 Tenth St., N. W., Washington, D. C.

QUEENS — QUEENS

LARGE, leather-colored 3-banded Italian queens; 10-years selection, bred for honey-gathering; gentle, hardy and long-lived. Price: Select untested, 1, \$1.25; 6, \$6.50; 12, \$12. After July 1: 1, \$1; 6, \$5; tested, \$1.50 each. Write for price on large orders. Free booklet, "How to Transfer. Get Honey and Increase."

J. M. GINGERICH, KALONA, IOWA.

INDIANOLA APIARY offers Italian Bees and Queens for following prices: Untested Queens, \$1.00 each; Tested Queens, \$1.50 each. Bees, per lb., \$2.00. Nucleus, \$2.00 per frame. No disease. Bees inspected.

J. W. SHERMAN,
Valdosta, Georgia.

Ohio State Field Meet

—To be held at—

Delphos, Ohio, Wed., Sept. 13

A. I. ROOT, E. R. ROOT,
GEO. S. DEMUTH, DADANT & SONS,
Scheduled to be present.

Special Program.

All beekeepers and any one interested in beekeeping and honey invited to attend. Largest display of honey and bee supplies ever exhibited in the central states.

I. F. MILLER'S STRAIN

Italian Queen Bees

From my best **SELECT BREEDERS**; gentle, roll honey in, hardy, winter well, not inclined to swarm, three-banded, 28 years' breeding experience. Satisfaction guaranteed. Safe arrival in U. S. and Canada.

1 Untested, \$1.25; 6, \$7.00; 12, \$12.00.
1 Sel. Unt., \$1.50; 6, \$8.00; 12, \$14.00.

I. F. MILLER,
Brookville, Pa., 183 Valley.

Write for Book
Today



FARM WAGONS

High or low wheels—steel or wood—wide or narrow tires. Steel or wood wheels to fit any running gear. Wagon parts of all kinds. Write today for free catalog illustrated in colors.

ELECTRIC WHEEL CO., 23 Elm Street, Quincy, Ill.



HONEY

We are in excellent position to serve beekeepers who do not produce enough Honey to supply their trade. We have a big stock of fine table honey of various grades always on hand. In 60-lb. Tins Crystallized—Water White Orange, 15c; White Sage, 14c; Extra L. A. Sage, 12c; Buckwheat, 10c.

GLASS AND TIN HONEY CONTAINERS.

2½-pound cans.....Crates of 100, \$4.50
5-lb. pails (with handles), 1 dozen reshipping cases...\$1.00 case; crates of 100, \$7.00
10-lb. pails (with handles).....Crates of 50, \$5.25
60-lb. tins, 2 per case.....New, \$1.20 case; used, 25c

White Flint Glass, with Gold Lacquered Wax Lined Caps.

8-oz. honey capacity...\$1.50 per carton of 3 doz.
16-oz. honey capacity...\$1.20 per carton of 2 doz.
Qt. 3-lb. honey capacity...90c per carton of 1 doz.

HOFFMAN & HAUCK, Inc.
WOODHAVEN, NEW YORK.

ROOT QUALITY QUEENS

At Reduced Prices in Quantity Lots.

Your success or failure in securing the maximum crop of honey next season depends largely upon the quality of queens you introduce into your colonies this fall.

Why not play safe and order ROOT QUALITY QUEENS which will mean more honey profits for you.

The Different Grades of Queens.

Italian queens are distinguished from blacks by three yellow bands on the upper part of the abdomen. Leather-colored Italians show three stripes of dark-yellow leather color.

An untested queen is one which is sold after she is found to be laying, not having been previously tested.

A tested leather-colored queen is one which has been examined by the breeder and her bees found to be uniformly marked with at least three dark-yellow bands.

Select queens of any of the grades are those which show better color, size, shape, etc. Frequently select untested queens develop into fine breeding queens.

Prices to October 1.

	1 to 9.	10 to 24.	25 to 49.	50 to 99.	100 or over.
C312000—Untested . . .	\$1.50 ea.	\$1.25 ea.	\$1.10 ea.	\$1.00 ea.	\$0.90 ea.
C313000—Sel. Untested	2.00 ea.	1.70 ea.	1.55 ea.	1.45 ea.	1.35 ea.
C314000—Tested	2.50 ea.	2.10 ea.	2.00 ea.	1.85 ea.	1.75 ea.
C315000—Select Tested	3.00 ea.	2.50 ea.	2.40 ea.	2.25 ea.	2.00 ea.

Our Guarantee on Queens.

We guarantee safe arrival of queens sent in mailing cages. We agree to refund the money or replace the queen if the one first sent arrives dead; provided the beekeeping receiving the dead or unfit queen returns her at once and in her own shipping cage, properly marked with name and address of sender. No delay in returning the queen can be permitted. This guarantee applies only on queens sent to customers in the United States and Canada.

Mail all queen orders direct to Medina or to our nearest branch office.

THE A. I. ROOT COMPANY
WEST SIDE STATION **MEDINA, OHIO**

Midsummer Days in California. Cont'd from p. 587

brannies. Whether they asked for honey or not I consider his use of it in response to those letters a tribute to nature's only concentrated sweet. Also it shows he is a well-informed young man, and you may be sure we took pains he should be even more so; at least, in regard to the food value of honey, by sending him some literature on the subject. He gave us a sample of the honey brannies, and although they were made some five weeks before they were deliciously crisp. He guarantees them to remain crisp as long as the package is unbroken.

This may appear to be giving brannies some free advertising. Perhaps half the civilized world is in need of more "roughage" in the diet to provide better elimination and will be as long as we continue to use so many over-refined foods. For that reason brannies are likely to increase in popularity, and, if we honey people take pains to ask for honey brannies and tell our friends about them, it will open one more avenue to the sale of honey.

Queens - Golden - Queens

Have you secured all you need? I have them as fine as you can secure anywhere at a reasonable price. Untested, \$1.00; six, \$5.50; 12, \$10. If they don't give you satisfaction and you write me, I will make it satisfactory to you.

E. A. SIMMONS, GREENVILLE, ALA.

75c EACH

One or more **SELECT** Untested Three-Banded Italian Queens. No poor-appearing queen will be sent. A satisfactory sale guaranteed. No disease.

D. W. HOWELL, SHELLMAN, GEORGIA.

ROOT QUALITY BEES AND BEEKEEPERS' SUPPLIES.

Bees in the hive, in packages, and nuclei, three-banded leather-colored Italian queens. Let a beekeeper of long standing serve you in your requirements for 1922. Catalog on request.

O. G. RAWSON,

3208 Forest Place, East St. Louis, Illinois.

FOR SALE.—Safety Comb honey cartons for sections, size $4\frac{1}{4} \times 4\frac{1}{4} \times 1\frac{1}{2}$; $4\frac{1}{4} \times 4\frac{1}{4} \times 1\frac{1}{2}$; $4 \times 5 \times 1\frac{1}{2}$; $3\frac{3}{4} \times 5 \times 1\frac{1}{2}$; $4\frac{1}{4} \times 4\frac{1}{4} \times 1\frac{1}{2}$; $4\frac{1}{4} \times 4\frac{1}{4} \times 1\frac{1}{2}$; $4\frac{1}{4} \times 4\frac{1}{4} \times 1\frac{1}{4}$; $4\frac{1}{4} \times 4\frac{1}{4} \times 1\frac{1}{2}$; for 50 cents per hundred, so long as present stock last. Sections equipped with these safety cartons will fit in the regular 24-pound shipping cases and insure safe shipment of honey. They are appropriately printed on all four sides. Send for sample.

THE A. I. ROOT COMPANY, Medina, Ohio.

Lockhart's Silver-gray Carniolans

"LINE BRED" for the past 34 years. They are VERY hardy, gentle, prolific, great workers, and builders of VERY WHITE comb, and use mostly wax in place of propolis. Prices of queens for 1922: Untested queens, \$1.00; select untested, \$1.50; tested, \$2.00; select tested, \$3.00. Breeders, \$5.00, \$10.00. Safe arrival guaranteed in U. S. and Canada. No foul brood here.

F. A. LOCKHART & COMPANY, LAKE GEORGE, NEW YORK

NEWMAN'S QUEENS

Originated from the world-famous Moore strain of Italians. Absolutely first quality and fully guaranteed, no disease. Satisfaction and safe arrival.

Untested: 1, \$1.25; 6, \$6.00; 12, \$11.00.
Sel. Unt.: 1, \$1.75; 6, \$8.00; 12, \$15.00.

Circular free.

A. H. NEWMAN, Queen-Breeder.
Morgan, Kentucky.

MACK'S QUEENS

75c EACH

We are uniting our nuclei this month and are making the price so that they will move in a hurry. Send in a trial order and be convinced that Mack's queens are unexcelled. If unable to fill your order, it will be promptly returned. All queens guaranteed.

Untested, 75c ea. Select Untested, 90c ea.

HERMAN MCCONNELL
ROBINSON - - - - - ILLINOIS

Goldens the Best

14 years in business should give you best queens possible. Untested, \$1. or 6 for \$5; in lots of 25 or more, 75c each. Virgins, 40c each, or 3 for \$1. Satisfaction and promptness my motto.

R. O. COX, Box 25, RUTLEDGE, ALABAMA.

Would exchange some of our queens for supplies for next year's supply. We need 10,000 queen cages, three-hole complete without candy, 1000 metal spaced Hoffman frames, 50 double-walled hives, 50 single-walled hives, 100 metal covered tops, 200 inner covers without bee-escape hole, 150 lbs. medium brood foundation. Everything must be new and in the flat and in ten-frame standard equipment. Write and tell us what you have to offer.

W. G. Lauver, Middletown, Pa.

Prices for the Remainder of the Season



QUEENS

1 to 4 inclusive,
\$2.00 each

5 to 9 inclusive,
\$1.95 each

10 or more.
\$1.90 each

Breeders,
\$10.00 each

Introducing
Cages, 75c each

JAY SMITH

ROUTE THREE.

VINCENNES, INDIANA

Bee Supplies

SPECIAL PRICES ON THE FOLLOWING NO. 2 SECTIONS.

100,000 $4\frac{1}{4} \times 4\frac{1}{4} \times 1\frac{1}{2}$ Plain
at \$7.00 per 1000
50,000 $4\frac{1}{4} \times 4\frac{1}{4} \times 1\frac{3}{4}$ Two-beeway
at \$8.00 per 1000

The above are all packed 500
to a crate.

REDUCED PRICES ON TIN AND GLASS HONEY CONTAINERS.

Send us a list of your requirements of containers, and we will make you prices that will save you money.

We can make shipment the same day order is received.

We carry a complete line of EVERYTHING FOR THE BEEKEEPER, and can make prompt shipment. Write for our catalog.

A. H. RUSCH & SON CO.
REEDSVILLE, WISCONSIN.

QUEENS

OUR OLD RELIABLE THREE-BANDED ITALIANS ARE HONEY GETTERS.

They are gentle, prolific, and very resistant to foul brood. Orders booked for one-fourth cash. Safe arrival guaranteed. Circular free.

PRICES

	1	6	12
Untested	\$1.00	\$5.50	\$10.00
Select Untested	1.25	6.50	12.50
Tested	2.25	12.50	24.00
Select Tested			\$3.00 each

See our Dec. and Jan. Advertisement.

JOHN G. MILLER

723 C Street, Corpus Christi, Texas.

QUEENS

Reliable Three-Banded Italians

Western Beekeepers, now is the time to requeen those colonies. Head them with one of our vigorous young queens and be assured of having strong colonies in the spring when every bee counts. We can supply you promptly at the following prices:

Untested—1, \$1.00; 5, \$4.50; 10 to 50, 80c each; larger lots, 75c each. Tested—1, \$2.00; 10, \$17.00.

The Orange Apiaries, Porterville, Cal.

O. F. Darnell, Prop. M. S. Fortune, Queen-Breeder.

Big Reduction

--ON--

Bee Supplies

Shipping cases.....\$30.00 per 100
Slotted section-holders...\$3.00 per 100
Sections, 1 $\frac{1}{8}$, No. 1...\$10.00 per 1000
Job lots of frames, regular
size.....\$3.00 per 100
Standard Hoffman frames,
9 $\frac{1}{8}$ deep.....\$4.50 per 100
Unspaced wedged top-bar frames,
9 $\frac{1}{8}$ deep.....\$2.75 per 100

Send for Catalog and Price List.

CHARLES MONDENG

146 Newton Avenue N. and
159 Cedar Lake Rd.
MINNEAPOLIS, MINN.

NEW ENGLAND

Beekeepers will find a complete line of the best supplies here. Send in your order early and be ready for the harvest. Remember this is the shipping center of New England. Write for new catalog.

H. H. JEPSON

182 Friend Street.

BOSTON 14, MASS.

MASON BEE SUPPLY COMPANY,
Mechanic Falls, Maine.

From 1897 to 1922 the Northeastern Branch of
The A. I. Root Company.

PROMPT AND EFFICIENT SERVICE

BECAUSE—Only Root's Goods are sold.

It is a business with us—not a side line.

Eight mails daily—Two lines of railway.

If you have not received 1922 catalog send name
at once.

HONEY CONTAINERS

Prompt Shipment, F. O. B. Brattleboro, Vt.

1-pound Round Jars, per case of 24.....	\$1.20
1-pound Round Jars in Crates of 12½ Dozen, per Crate.....	7.00
2-pound Round Jars, per Case of 12.....	.90
2½-pound Friction Top Cans, per Box of 24.....	1.10
2½-pound Friction Top Cans, per Carton of 100.....	4.00
5-pound Friction Top Pails, per Carton of 50.....	3.25
10-pound Friction Top Pails, per Carton of 50.....	4.50
5-gallon (60-pound) Square Cans, per Case of 2, in 10 Case Lots.....	10.50

F. COOMBS & SONS, BRATTLEBORO, VERMONT

ITALIAN BEES AND QUEENS, HONEY, BEESWAX AND APIARIAN SUPPLIES.

DON'T DELAY---GET OUR PRICES
WE SAVE YOU MONEY

“falcon”

SUPPLIES --- QUEENS --- FOUNDATION

W. T. FALCONER MFG. COMPANY

FALCONER (Near Jamestown), NEW YORK.

“Where the best beehives come from.”

BANKING BY MAIL AT

A.T.Spitzer
PRES.

E.R.Root
VICE PRES.

E.B.Spitzer
CASHIER

For Yourself or For Others?

You are either using your money for the benefit of yourself or of others. Spend it needlessly, and “the other fellow” profits. Save, and YOUR future is protected. Build up a 4% Savings Account in the Savings Deposit Bank Company. Deposits may be sent safely and conveniently BY MAIL.

4%

The SAVINGS DEPOSIT BANK CO.

THE HOME OF THE HONEY-BEE

MEDINA, OHIO

Queens Queens

Knight's Three-Banded

Give them a trial and be added to my book of satisfied customers.

Prices for Balance of Season.

1 Select Untested.....	\$1.00
5 Select Untested.....	4.75
10 Select Untested.....	8.50
Tested Queens, each....	2.00

For large quantities write for prices. Have the bees, men and equipment to handle rush orders by return mail. Pure mating and satisfaction guaranteed. It is left with customer to say what is satisfaction. No disease.

JASPER KNIGHT

HAYNEVILLE - - ALABAMA

BUCKWHEAT ITALIAN QUEENS

Our very best queens are reared this month during the flow from goldenrod. Conditions are ideal for queen-rearing now.

SELECT THREE-BANDED

(Note—We begin this month to unite nuclei for winter, and we will sell queens taken from these, as we unite them, for \$1.00 each. Our regular quality, but shipment to be made at our convenience, hence the lower price.)

Untested, each, \$1.25; 6, \$7.00; 12, \$13.00; 25, \$25.00.

WE GUARANTEE

safe arrival in U. S. and Canada, pure mating, no disease, and satisfaction.

J. B. HOLLOPETER

ROCKTON, PENNSYLVANIA.

QUIGLEY QUALITY

Italian Queens and Bees are produced by double grafting, producing queens of superior quality and long-lived bees, filling your big hives with bees. Hustlers, hardy, wintering on summer stands. No disease; 36 years in this location. Purity and satisfaction guaranteed.

Untested—Each, \$1.25; 6 for \$7.00; 12 for \$12.00. Select Untested, add 50c each extra. Tested, \$2.00 each.

Send for circular.

E. F. QUIGLEY & SON

UNIONVILLE, MISSOURI.

—QUEENS OF—

MOORE'S STRAIN

OF ITALIANS PRODUCE WORKERS

That fill the supers quick
With honey nice and thick.

They have won a world-wide reputation for honey-gathering, hardiness, gentleness, etc. I am now filling orders by return mail. Untested queens \$1.25; 6, \$6.50; 12, \$12. Select Untested, \$1.50; 6, \$8.00; 12, \$15. Safe arrival and satisfaction guaranteed.

J. P. MOORE, Queen Breeder

Route 1, MORGAN, KENTUCKY.

SCOTT QUEENS ARE GOOD QUEENS

MY QUEENS ARE GETTING RESULTS.

Among my hundreds of colonies and for my customers. One writes: "Dear Mr. Scott: Please book me for 1/2 doz. queens. Those I got from you last season have made 150 lbs. comb honey each so far this season. Yours truly."—(Name on request.

GOLDEN OR THREE-BANDED QUEENS.

After July 1: One, \$1.25; six, \$7.00; dozen, \$13.00. They are bound to please. Pure mating and safe arrival. Prompt shipments. Circular on request.

ROSS B. SCOTT, LA GRANGE, INDIANA.

BEEKEEPERS' SUPPLIES.

The kind you want and bees need. Good stock of the A. I. Root Co.'s make of goods on hand. Catalog free. Beeswax wanted.

J. NEBEL & SON SUPPLY CO., High Hill, Mo.



KITSELMAN FENCE

GET IT FROM THE FACTORY DIRECT



"Saved 24¢ a Rod," writes William Henry Ripley, O. You, too, can save by buying direct at Lowest Factory Prices. **WE PAY THE FREIGHT.** Write today for Free 100-page Catalog of Farm, Poultry and Lawn Fence, Gates, Posts and Barbed Wire. **KITSELMAN BROS. Dept. 21 MUNCIE, IND.**

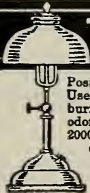
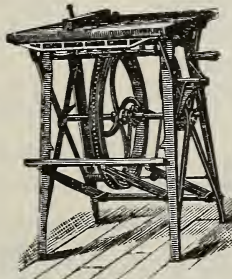
BARNES' HAND & FOOT POWER MACHINERY

This cut represents our combined circular saw, which is made for beekeepers' use in the construction of their hives, sections, etc.

Machines on Trial

Send for illustrated catalog and prices.

W. F. & JOHN BARNES CO.
545 Ruby Street
ROCKFORD, ILLINOIS.



The "BEST" LIGHT

Positively the cheapest and strongest light on earth. Used in every country on the globe. Makes and burns its own gas. Casts no shadows. Clean and odorless. Absolutely safe. Over 200 styles. 100 to 2000 Candle Power. Fully Guaranteed. Write for catalog. **AGENTS WANTED EVERYWHERE.**

THE BEST LIGHT CO.

306 E. 5th St., Canton, O.

World's Best Roofing
at Factory Prices

"Reo" Cluster Metal Shingles, V-Crimp, Corrugated, Standing Seam, Painted or Galvanized Roofing, Siding, Wallboard, Paints, etc., direct to you at Rock-Bottom Factory Prices. Save money—get better quality and lasting satisfaction.

Edwards "Reo" Metal Shingles

have great durability—many customers report 15 and 20 years' service. Guaranteed fire and lightning proof.



LOW PRICED GARAGES

Lowest prices on Ready-Made Fire-Proof Steel Garages. Set up any place. Send postal for Garage Book, showing styles.

THE EDWARDS MFG. CO.
933-983 Pike St. Cincinnati, O.

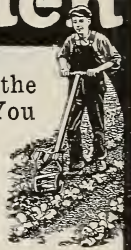
Free Roofing Book

Get our wonderfully low prices and free samples. We sell direct to you and save you all in-between dealer's profits. Ask for Book No. 183

FREE Samples & Roofing Book

Better Way to Garden

Don't do garden work the slow back-breaking way. You can grow a far better garden, easier and with much less time and work.



BARKER

WEEDER, MULCHER AND CULTIVATOR
THREE MACHINES IN ONE

Simply push the BARKER along the rows (like a lawn mower). Eight blades revolving against a stationary underground knife destroy the weeds and in same operation break up the surface crust into a level, porous, moisture-retaining mulch. Aerates soil. Intensive cultivation. "Best Weed Killer Ever Used." Has leaf guards, also shovels for deeper cultivation. A boy can run it—do more and better work than 10 men with hoes.

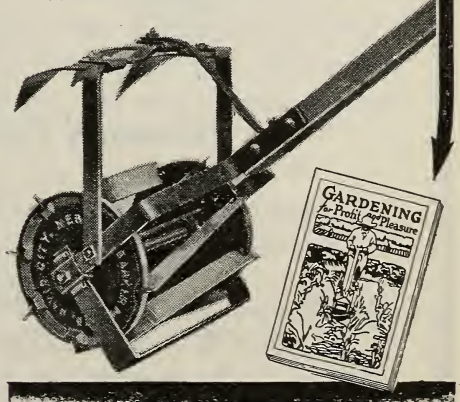
Write Us Today for FREE Booklet.

Let us tell you about this machine and how to raise bigger, better gardens—make gardening a pleasure. A valuable book, illustrated. Gives prices, etc. A card brings it. Write us today. Use coupon below.

BARKER MFG. CO.

Box 23

DAVID CITY, NEB



Barker Mfg. Co., Box 23, David City, Neb.

Gentlemen: Send me postpaid your free booklet and Factory-to-User offer.

Name

Town

State..... RFD or Box.....

A SUPERIOR
QUALITY AT
LESS COST

Supplies

(MADE BY THE DIAMOND MATCH CO.)

A SUPERIOR
QUALITY AT
LESS COST

The Diamond Match Co., who manufacture our supplies, are the largest manufacturers in the world who make bee supplies. They own their own timber lands, mills and factories. We pass on the full advantage of the resulting low production cost to the Beekeeper.

One-Story Complete Dovetailed Hive

With metal telescope cover, inner cover, reversible bottom, Hoffman frames, nails, rabbets.

Standard Size.

Crate of five, K. D., 8-frame.....\$12.65

Crate of five, K. D., 10-frame..... 13.25

Jumbo Size.

Crate of five, K. D., 10-frame..... 14.25

Hive-Bodies

With Hoffman frames, nails, rabbets.

Standard size, crate of 5, K. D., 8-fr.\$5.20

Standard size, crate of 5, K. D., 10-fr. 5.85

Jumbo size, crate of 5, K. D., 10-fr. 6.85

Hoffman Frames

Standard size100, \$5.20; 500, \$25.00

Shallow100, 4.30; 500, 21.00

Jumbo100, 5.80; 500, 28.00

Diamond Brand Foundation

Medium5 lbs., 68c lb.; 50 lbs., 65c lb.

Thin Super..5 lbs., 75c lb.; 50 lbs., 72c lb.

Comb Honey Supers

For 4 x 5 x 1½ sections including section-holders, fence-separators, springs, tins and nails.

Crate of five, K. D., 8-frame.....\$5.60

Crate of five, K. D., 10-frame..... 6.00

HOFFMAN & HAUCK, INC.

WOODHAVEN, NEW YORK

REDUCED PRICES

We have had more orders than we could fill each year, yet we are striving just as hard to produce better queens each year as we would if we had more queens than orders, and we believe that each year we are able to produce queens of a little higher quality. We are not in the business for the time being, or to get every dollar out of it we can, but because we like to rear queens and we want to give you value received for your money. After we have reared the best possible queens for you, we want to put them to you, not just alive, so we can get your money, but in the best possible condition.

OUR GUARANTEE: This simply means that, if any queen we sell is not satisfactory in every respect, we will replace her. Our breeding stock and methods of production are such that we can give this guarantee.

Untested One, \$0.75; ten or more, \$0.60 each.

Tested One, 1.75; ten or more, 1.50 each.

We have 2,000 Tested Queens, reared late last fall, that we will supply at our convenience at \$1.00 each, or ten or more at \$0.80 each.

Send for big bargain list of **BEE SUPPLIES**. New sixty-pound cans, two to the case, in lots of fifty cases, at 91c.

The Stover Apiaries, Mayhew, Miss.

Requeen With Forehand's 3-Bands

They Satisfy; Why?

Because they are guaranteed to be as good as money can buy. Not a cheap queen but a queen of the best at a cheap price. Every queen guaranteed to reach destination in first-class condition, to be purely mated and give perfect satisfaction or money back. Orders filled by return mail.

Untested, 1 to 25, 90c each; 25 to 50, 80c each; 50 to 100, 75c each. Select Untested, \$1 each. Tested, \$1.75 each.

Better Queens for Less Money

N. FOREHAND, RAMER, ALA.

SELECTED QUEENS

of the Highest Quality

Queens by return mail.

Three-banded queens our specialty.

Our queens produce bees that are wonderful honey-gatherers, gentle and most resistant to all diseases. We guarantee every queen we ship to give entire satisfaction. We clip wings free of charge on request. Safe arrival and prompt delivery are also fully guaranteed. There may be other queens just as good, but we believe you will find few better. To know them, try them.

PRICES.

Select untested \$0.75 each
50 or more60 each
Select Tested 1.50 each

Hayneville Apiary Co.
Hayneville, Ala.

FREE QUEENS

3-Banded

Goldens

For September to make new customers we offer our fine strain of honey-gatherers at the lowest prices possible, and for ten of the highest honey records made from colonies headed with our queens, we will give one fine tested 3-banded or Golden queen free to each. For quick service send us your order. Now is the time to requeen.

Quality Queens—September Prices.

Untested, 1 to 12 \$0.85 each
Sel. Untested, 1 to 12 1.15 each
Sel. Tested 2.00 each

Wings clipped free on request. Entire satisfaction and safe arrival guaranteed in U. S. and Canada.

Ohio Valley Bee Company
CATLETTSBURG, KY,



High Quality Three-Banded ITALIAN Queens

BY RETURN MAIL

Untested Queens, 1, \$1.00; 6, \$5.50;
12, \$10.00; 25, \$20.00.

Select Untested, 1, \$1.15; 6, \$6.20; 12,
\$11.40; 25, \$22.25.

Select Tested, \$1.75 each.

Safe delivery and fullest satisfaction
guaranteed.

FRANK BORNHOFFER

MT. WASHINGTON (CINCINNATI), OHIO

1923

1923

Bees & Bee Supplies

ROOT QUALITY

We carry a complete line of A. I. Root Co. supplies. Send for catalog. We are now booking orders for our nuclei for the spring of 1923. Note what the following prominent beekeepers say about our nuclei and business methods.

"In reference to your nuclei let me say I will have no hesitation in recommending you as to ability to put up bees for shipment or as to your business integrity.—R. F. Holtermann, Brantford, Canada.

"The fifty nuclei arrived in fine shape and were packed in first-class order. I am well pleased with shipment.—Eldon Ankeman, Gowanstown, Ont., Canada.

"Twenty-five nuclei arrived in excellent condition. This is something like buying bees.—Arthur F. Hodgson, Jarvis, Ont., Canada."

3-fr. Nuclei Italian Bees and Queen \$5.00 ea.

3-fr. Nuclei Black Bees and Italian Queen 4.50 ea.

One extra pound of bees with each nucleus, and safe arrival, free from disease guaranteed. One-third down with order to guarantee acceptance.

A. R. IRISH

BOX 134.

SAVANNAH, GEORGIA

QUEENS

ITALIANS - CARNIOLANS - GOLDENS

We ship thousands of queens and thousands of pounds of bees all over the United States and Canada every year.

2-comb regular Nuclei, no extra bees \$3.75

3-comb regular Nuclei, no extra bees 5.25

2-comb regular Nuclei with 1 pound extra bees 5.25

1-comb regular Nuclei with 2 pounds extra bees 5.25

1-lb. pkg. bees, 2.25 ea.; 25 or more 2.15

2-lb. pkg. bees, \$3.75 ea.; 25 or more 3.60

3-lb. pkg. bees, \$5.25 ea.; 25 or more 5.00

QUEEN FREE with all of the above packages except 1-pound size; will furnish them at half price with these.

PRICES OF QUEENS ONLY.

1 Untested Queen, \$1.05 each; 25 or more, 91c each; per 100.....\$85.00

1 Select Untested, \$1.19 each; 25 or more, \$1.05 each; per 100..... 95.00

1 Tested Queen, \$1.57; 25 or more, each 1.40

1 Select Tested Queen, \$1.85 each; 25 or more, each..... 1.57

Breeders, each...\$5.00, \$10.00 and \$15.00

Send for FREE circular.

NUECES COUNTY APIARIES, Calallen, Texas

E. B. AULT, Prop.

Collier's Bees and Queens

Breeding Queens Imported
from Italy.

THREE-BANDED ITALIANS ONLY.
Shipped by return mail.

Let me have your order for the 1922 season. My queens are bred by men who know how. Every order given my personal attention. All queens reared in strong two-story, ten-frame hives, under natural conditions.

Improve your weak, run-down colonies by using young, vigorous three-banded Italian Queens from my imported stock.

You take no risk buying from Collier. If you are not satisfied I will replace or refund your money. Safe delivery guaranteed. Prices: Untested—1, 70c; 6, \$4.00; 12, \$7.75; 24, \$15.00; 100, \$57.00. Select Untested—1, 90c; 6, \$5.00; 12, \$9.00; 100, \$70.00. Tested Queens—\$1.50 each. Select Tested—\$2.00 each.

D. E. Collier

Ramer - - - Alabama

NEW PRICES

On Friction Top Cans and Pails

We quote as follows:

	25	50	100	200	500	1000
2½-lb. cans.....	\$1.15	\$2.15	\$4.10	\$7.75	\$18.75	\$36.00
5 -lb. pails.....	1.90	3.50	6.50	12.00	28.25	55.50
10 -lb. pails.....	2.75	5.00	9.50	18.00	43.00	83.00

All packed in fibre containers. They keep neat and clean till you use them. Prices F. O. B. cars Lansing and not from some distant shipping point.

Send in Your Order

FIVE-GALLON CANS—1¾-inch screw top, packed two in a case.

Prices as follows:

Each, \$1.40; 10 Cases, \$13.00; 25 Cases, \$30.00; 50 Cases, \$57.50;
100 Cases, \$110.00.

Shipping cases for comb honey. Folding cartons for comb honey.

F. O. B. cars Lansing, not from some distant shipping point.

Send in Your Order

"A" GRADE TIN PASTE.

Just what you want for attaching labels to tin and glass containers. It sticks. Prices as follows:

1 Pt., 25c; 1 Qt., 45c; 1 Gal., \$1.50.

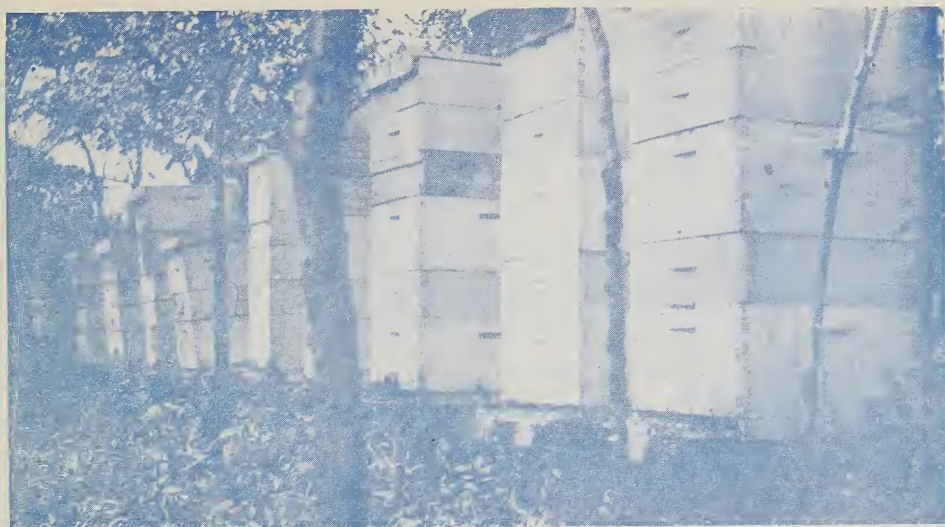
Postage extra. REMEMBER

IT STICKS

M. H. HUNT & SON

510 North Cedar Street

LANSING, MICHIGAN



Achord's Italians Are Good Bees

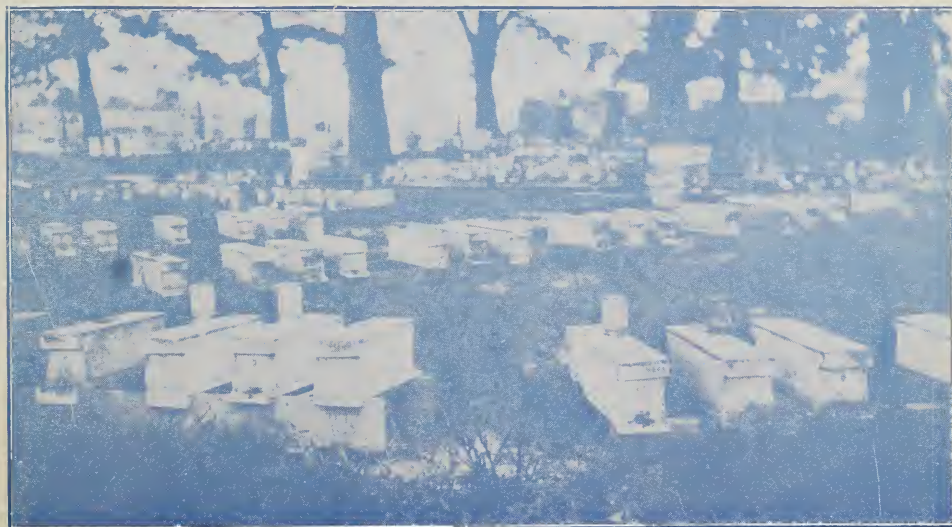
Whether you have only a few colonies or five hundred, we believe you will like them and they will prove a worthy addition to your yard. They are a bright, hustling, three banded strain, bred primarily for honey production, but also gentleness and color. We have spared neither labor nor expense to make them the very best.

Price of Queens, June 15th to October 1.

Untested.....	1 to 19, 75c each; 20 or more, 70c each
Select Untested	\$1.10 each; 5 or more, \$1.00; 10 or more, 90c; 25 or more, 80c
Tested.....	\$1.75 each; 5 or more, \$1.65

Safe arrival and satisfaction guaranteed.

W. D. ACHORD, FITZPATRICK, ALABAMA.





Now Sell Your Honey

And Sell It Well.

The beekeeper who has produced a good crop of honey has one more important thing to do—he must sell it. Selling “caps the climax” of the year’s work. If he fails as a salesman, much of his hard and careful work in producing a fine crop of honey becomes a failure. Brains, ingenuity, enterprise, patience, good sense and good business are needed in selling the crop and so “bringing home the bacon.”

We want to urge upon every beekeeper who has a possible local market to develop that market. By making a local market for his honey, the beekeeper assures himself of success and profit year in and year out. It is in his selling methods that the average beekeeper needs to better his practice and do some hard thinking.

Honey is not hard to sell. It has more “talking points”—it has more interest in it, if you please, than butter, eggs and cheese combined.

What honey needs to sell well is to be put into neat, attractive packages, and then taken to the right place in the right way. Remember, “honey to sell well, must look well.” Also remember that honey to sell well must be taken to the right market, talked well and advertised well. It won’t sell itself.

To help the beekeeper sell his honey we have just printed a handsome little booklet entitled

“How To Sell Honey.”

We have put, into this booklet, the best ideas of the best honey-sellers we know. Its aim in chief is to tell the honey producer how to develop a local market for his honey. It gives him the best business ideas on his selling problem. And it is free. Just drop us a postal card and tell us to send you “How to Sell Honey,” and we will send it by the next mail.

Aids to Honey Selling.

To sell honey well, the beekeeper may need some of the following articles:

Honey Labels, “Honey-for-Sale” Signs, Glass or Tin Containers, Recipe Booklets, Rubber Stamping Outfit, Mailing Cases, Business Cards, an Observation Hive, Shipping Cases, Letterheads, Glue (for labels), Comb Honey Cartons.

We shall be glad to quote you prices on any of these aids to selling. Our prices are very reasonable, quality the best. You surely will want to see our new honey-label catalog. It’s a beauty. Send for it today.



One of Our “Honey-for-Sale” Signs.”

THE A. I. ROOT CO., MEDINA, OHIO, West Side Sta.